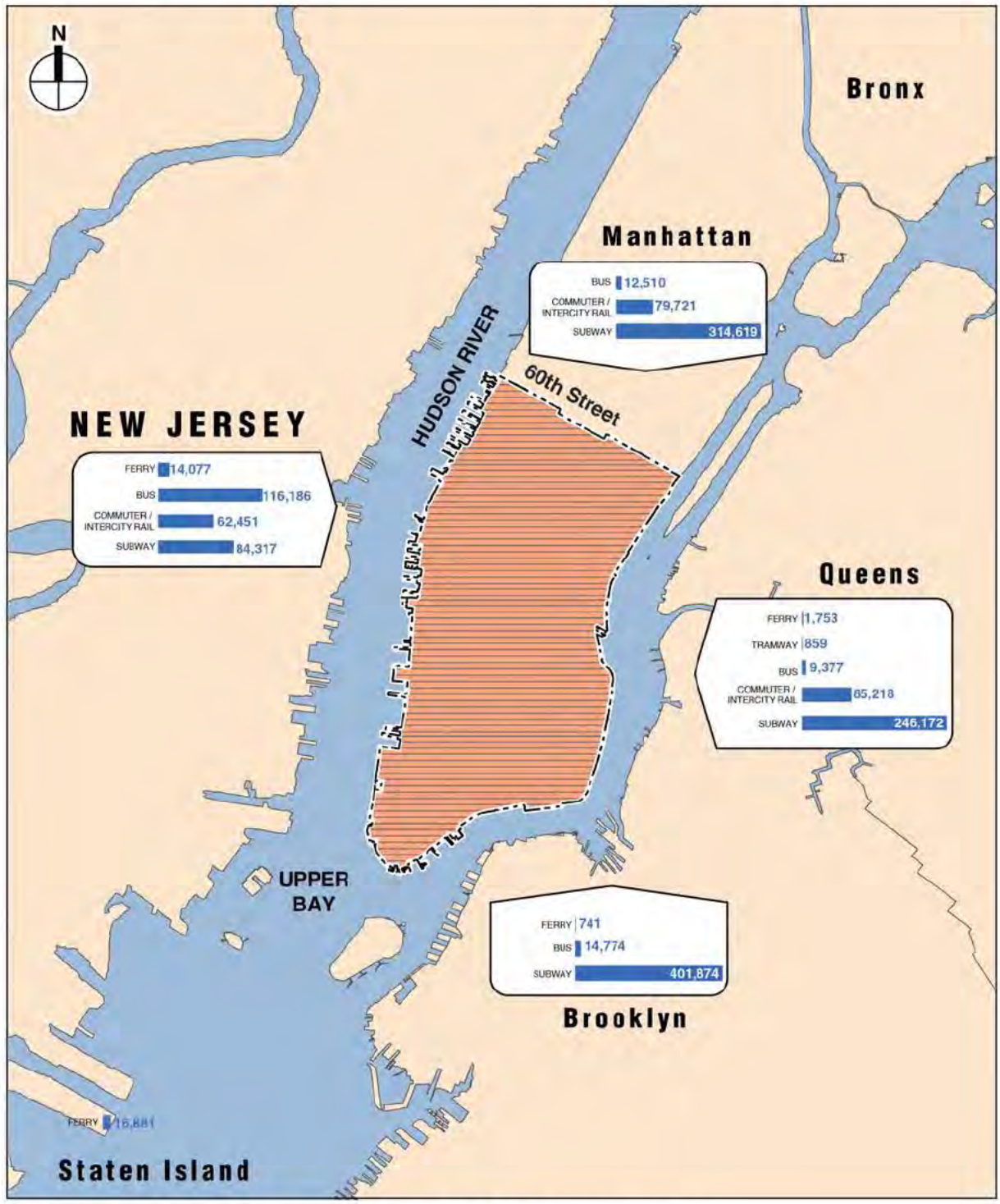
Figure 4C-5. Transit Modes into the Manhattan CBD by Volume at the Cordon Crossing (AM Peak Period)



Source: NYMTC *Hub Bound Travel Data Report 2019.*

The Staten Island sector has the smallest number of total trips. (The actual proportion of transit riders from this sector is lower since the *Hub Bound Travel Data Report* does not provide vehicle data for Staten Island because vehicles arrive to the Manhattan CBD via Brooklyn or New Jersey.) Staten Island trips on express buses that run through New Jersey and Brooklyn without stopping there, as well as bus-to-subway transfers in Brooklyn, are counted in those sectors.[26] Therefore, the only direct trips between Staten Island and the Manhattan CBD are via the ferry.

Appendix 4C-3 describes AM peak period ridership for each sector in greater detail.

4C.4 ENVIRONMENTAL CONSEQUENCES

4C.4.1 No Action Alternative

The evaluation of environmental consequences in this subchapter compares the CBD Tolling Alternative to the No Action Alternative in 2023. Because the *Hub Bound Travel Data Report 2019* used to describe the affected environment in Section 4C.3 is not directly comparable to the BPM results for 2023 for the No Action Alternative, this subchapter does not provide a discussion of the change in conditions between the affected environment discussed earlier and the No Action Alternative. The No Action Alternative conditions modeled from the BPM are compared to the CBD Tolling Alternative below.

BPM results were used to identify anticipated transit usage for the No Action Alternative in 2023 and 2045. The 2045 model includes background growth based on the projected overall growth in employment and population in the region and is consistent with the NYMTC 2045 Long Range Plan. More background on regional transportation effects is provided in Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling." For the No Action Alternative, the transit system within and outside of the Manhattan CBD would be comparable to current availability and utility of the transit system.

4C.4.2 CBD Tolling Alternative

As set forth in Section 4C.4.2.2, all tolling scenarios would generate an increase in transit ridership compared to the No Action Alternative. The representative tolling scenarios with the highest incremental ridership increases are used to assess potential adverse effects in the following two areas:

- Line-Haul Assessment – The projected change in ridership at the maximum load point for each transit service is assessed for the CBD Tolling Alternative's effects on line-haul capacity (the capacity of a transit mode at its peak ridership point) for any increases that pass the screening threshold for detailed analysis, as discussed in Section 4C.2. The assessment is conducted for transit services by the delineated sector crossings into the Manhattan CBD as established in Section 4C.4.
- Station Assessment – A station-level assessment is provided for any transit station (including subway, PATH, or commuter rail) that exceeds CEQR thresholds of increased ridership of more than 200 passengers in a peak hour, also as discussed in Section 4C.2.

[26] The average weekday ridership of Staten Island express bus routes was 32,909 in 2019 (the same year as the *Hub Bound Travel Data Report 2019*), which is close to the total number of daily riders on the Staten Island Ferry. MTA data is available at http://web.mta.info/nyct/facts/ridership/ridership_bus.htm.

4C.4.2.1 CHANGE IN RIDERSHIP BY MODE AND OPERATOR

Table 4C-6 summarizes projected future ridership by all transit modes in 2023—for the No Action Alternative and CBD Tolling Alternative (Tolling Scenarios A through G) for the AM peak period—based on the results of the BPM.

While most of the analysis in this subchapter covers the year 2023, Table 4C-8 provides information for the horizon year 2045 in a format parallel to Table 4C-6 to show the longer-term projected level of environmental consequences based on BPM results.

All tolling scenarios would result in an increase in overall transit ridership of between 1.25 percent (Tolling Scenario A) and 1.77 percent (Tolling Scenario E) compared to the No Action Alternative for the entire regional study area. The rate of change across the tolling scenarios varies by about 33,000 trips, with the lowest projected increase occurring under Tolling Scenario A and the highest under Tolling Scenario E. This indicates that higher toll rates (Tolling Scenarios D, E, and F) would result in a higher shift to transit than lower toll rates (Tolling Scenarios A, B, and G). Tolling Scenario C reflects a middle area with higher tolls and more crossing credits than Tolling Scenarios A, B, and G, but lower tolls and fewer crossing credits than Tolling Scenarios D, E, and F. A table provides a percentage change summary for all the major transit elements evaluated in this subchapter including New York City subways that carry the majority of regional transit riders as well as commuter railroads, buses, ferries, and other transit services. A slightly higher increment is projected for Metro-North and ferry ridership under Tolling Scenario F. By 2045, transit ridership as a whole is projected to increase by several hundred thousand boardings (given assumptions in the NYMTC regional model).[27]

4C.4.2.2 COMPARISON ACROSS TOLLING SCENARIOS

Representative Tolling Scenario

The assessment identifies the representative tolling scenario with the highest incremental increase in ridership for specific transit elements. These transit elements are primarily drawn from Tolling Scenarios D, E, and F because these tolling scenarios are projected to experience the largest increases in transit ridership. (Tolling Scenario C has been identified as the representative case with the highest incremental increase in ridership for Newark Penn Station for both PATH and NJ TRANSIT.)

Analysis of Transit Lines and Transit Stations

Transit lines and transit stations were each analyzed using the representative tolling scenario with the highest incremental ridership increase to determine the maximum level of potential effects. For transit lines, the potential effects were measured by how train or bus loading (i.e., line-haul) conditions are expected to change. For transit stations, the potential effects were measured by the anticipated usage changes at fare control areas (FCA) (i.e., turnstiles and gates separating free and fare zones) and vertical circulation elements (VCE) (i.e., stairs and escalators).

[27] These increases are due to the NYMTC socioeconomic forecasts for the 28-county region. Most NJ TRANSIT rail boardings and alightings are in New Jersey at stations including Newark Penn Station, Secaucus Junction, and Hoboken Terminal. This results in only about 2,000 new alightings at Penn Station New York.

Table 4C-6. Transit Ridership: No Action Alternative and CBD Tolling Alternative (2023 AM Peak Period)

MODE	NO ACTION ALTERNATIVE	TOLLING SCENARIO A	TOLLING SCENARIO B	TOLLING SCENARIO C	TOLLING SCENARIO D	TOLLING SCENARIO E	TOLLING SCENARIO F	TOLLING SCENARIO G
Subway	3,138,960	3,184,961	3,187,374	3,192,428	3,199,370	3,203,052	3,199,783	3,197,389
New York City Transit	3,005,224	3,050,101	3,052,683	3,056,840	3,063,552	3,066,614	3,063,577	3,061,455
Port Authority Trans-Hudson (PATH)	133,736	134,860	134,691	135,588	135,818	136,438	136,206	135,934
Commuter and Intercity Rail	454,520	456,755	457,863	459,632	461,634	463,108	462,013	458,867
Long Island Rail Road	142,651	143,452	143,989	144,244	144,733	145,544	144,560	144,084
Metro-North Railroad	152,203	153,128	153,437	154,108	154,850	154,296	155,020	153,491
NJ TRANSIT	159,666	160,175	160,437	161,280	162,051	163,268	162,433	161,292
Buses	2,689,564	2,718,960	2,717,506	2,724,787	2,724,456	2,727,512	2,726,657	2,718,457
MTA buses	2,037,319	2,063,136	2,062,997	2,068,001	2,067,753	2,069,107	2,068,898	2,062,926
NJ TRANSIT	471,109	474,344	473,456	474,079	474,279	476,321	475,663	474,260
Other	181,136	181,480	181,053	182,707	182,424	182,084	182,096	181,271
Other Transit	58,635	60,073	60,225	60,467	60,474	60,475	60,712	60,246
Ferries	57,548	58,966	59,120	59,358	59,363	59,360	59,598	59,140
Tramway	1,087	1,107	1,105	1,109	1,111	1,115	1,114	1,106
TOTAL	**6,341,679**	**6,420,749**	**6,422,968**	**6,437,314**	**6,445,934**	**6,454,147**	**6,449,165**	**6,434,959**

Source: WSP, Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019*.

Note: Data total over a 4-hour period, defined as total boardings, which include transfers. (Because this ridership estimate includes transfers, the ridership reported is greater than MTA NYCT MetroCard data that is widely available.) The BPM includes MTA buses, NJ TRANSIT buses, smaller regional bus carriers, and private carriers. (Other smaller carriers and private carriers are included under "Other Buses.") Tramway volumes were calculated using an incremental change factor derived from Queens/Roosevelt Island sector change per each tolling scenario.

Table 4C-7. Percentage Change in Transit Ridership: No Action Alternative and CBD Tolling Alternative (2023 AM Peak Period)

MODE	TOLLING SCENARIO A	TOLLING SCENARIO B	TOLLING SCENARIO C	TOLLING SCENARIO D	TOLLING SCENARIO E	TOLLING SCENARIO F	TOLLING SCENARIO G
Subway	**1.5%**	**1.5%**	**1.7%**	**1.9%**	**2.0%**	**1.9%**	**1.8%**
New York City Transit	1.5%	1.6%	1.7%	1.9%	2.0%	1.9%	1.8%
Port Authority Trans-Hudson (PATH)	0.8%	0.7%	1.4%	1.6%	2.0%	1.8%	1.6%
Commuter and Intercity Rail	**0.5%**	**0.7%**	**1.1%**	**1.6%**	**1.9%**	**1.6%**	**1.0%**
Long Island Rail Road	0.6%	0.9%	1.1%	1.5%	2.0%	1.3%	1.0%
Metro-North Railroad	0.6%	0.8%	1.3%	1.7%	1.4%	1.9%	0.8%
NJ TRANSIT	0.3%	0.5%	1.0%	1.5%	2.3%	1.7%	1.0%
Buses	**1.1%**	**1.0%**	**1.3%**	**1.3%**	**1.4%**	**1.4%**	**1.1%**
MTA buses	1.3%	1.3%	1.5%	1.5%	1.6%	1.6%	1.2%
NJ TRANSIT	0.7%	0.5%	0.6%	0.7%	1.1%	1.0%	0.7%
Other	0.2%	0.0%	0.9%	0.7%	0.5%	0.5%	0.1%
Other Transit	**2.5%**	**2.7%**	**3.1%**	**3.1%**	**3.1%**	**3.5%**	**2.7%**
Ferries	2.5%	2.7%	3.1%	3.2%	3.1%	3.6%	2.7%
Tramway	1.8%	1.7%	2.0%	2.2%	2.6%	2.5%	1.7%
TOTAL	**1.2%**	**1.3%**	**1.5%**	**1.6%**	**1.8%**	**1.7%**	**1.5%**

Source: WSP, Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019* (Tramway), and analysis by FHI Studio.
Note: Data total over a 4-hour period, defined as percentage change in total systemwide boardings. The BPM includes MTA buses, NJ TRANSIT buses, other smaller regional bus carriers, and private carriers. (Other smaller carriers and private carriers are included under "Other Buses.") Tramway volumes were calculated using the average growth over a five-year period with an incremental change factor derived from Queens/Roosevelt Island sector change per each tolling scenario.

Table 4C-8. Transit Ridership: No Action Alternative and CBD Tolling Alternative (2045 AM Peak Period)

MODE	NO ACTION ALTERNATIVE	TOLLING SCENARIO A	TOLLING SCENARIO B	TOLLING SCENARIO C	TOLLING SCENARIO D	TOLLING SCENARIO E	TOLLING SCENARIO F	TOLLING SCENARIO G
Subway	3,505,040	3,556,434	3,552,926	3,559,460	3,569,286	3,576,311	3,572,538	3,557,745
New York City Transit	3,344,746	3,394,538	3,390,882	3,397,112	3,406,542	3,413,503	3,409,708	3,395,715
Port Authority Trans-Hudson (PATH)	160,294	161,896	162,044	162,348	162,744	162,808	162,830	162,030
Commuter and Intercity Rail	566,908	571,260	571,648	572,767	575,243	575,760	575,845	571,840
Long Island Rail Road	182,379	183,350	183,968	183,855	184,739	184,062	184,856	183,867
Metro-North Railroad	206,505	208,301	208,346	208,583	209,623	210,064	210,407	208,441
NJ TRANSIT	178,024	179,609	179,334	180,329	180,881	181,634	180,582	179,532
Buses	2,958,354	2,990,051	2,985,086	2,991,552	2,997,750	2,998,714	2,997,420	2,988,399
MTA buses	2,182,751	2,209,043	2,206,110	2,211,296	2,215,888	2,217,583	2,214,448	2,210,288
NJ TRANSIT	562,497	567,619	566,723	567,631	567,841	568,634	569,748	566,447
Other	213,106	213,389	212,253	212,625	214,021	212,497	213,224	211,664
Other Transit	**59,817**	**61,265**	**61,172**	**61,428**	**61,770**	**61,960**	**61,625**	**60,941**
Ferries	58,663	60,097	60,006	60,256	60,594	60,780	60,444	59,775
Tramway	1,154	1,168	1,166	1,172	1,176	1,180	1,181	1,166
TOTAL	**7,090,119**	**7,179,010**	**7,170,832**	**7,185,207**	**7,204,049**	**7,212,745**	**7,207,428**	**7,178,925**

Source: WSP; Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019*.

Note: Data total over a 4-hour period, defined as total boardings, which include transfers. (Because this ridership estimate includes transfers, the ridership reported is greater than MTA NYCT MetroCard data that is widely available.) The BPM includes MTA buses, NJ TRANSIT buses, smaller regional bus carriers, and private carriers. (Other smaller carriers and private carriers are included under "Other Buses.") Tramway volumes were calculated using an incremental change factor derived from Queens/Roosevelt Island sector change per each tolling scenario.

Analysis primarily considered AM peak ridership based on concentration of ridership. For station element analyses, potential effects in the PM peak hour were also considered to account for differences in circulation and flow within the stations.

The overall effects by tolling scenario are summarized below, along with the identification of the representative tolling scenario with the highest incremental increase in ridership used in the detailed assessment of environmental consequences (see Section 4C.4).*[28]*

For assessing capacity of *transit lines* (line haul), incremental shifts to transit were analyzed based on the representative tolling scenario with the highest incremental ridership at the tolling boundary. Table 4C-9 shows the number of lines exceeding the threshold for triggering detailed analysis, across all tolling scenarios. Tolling Scenarios D, E, and F are projected to have the largest number of lines with ridership increases over 200 passengers,[29] with the highest increases among lines over the threshold under Tolling Scenarios E and F.

Table 4C-10 and Table 4C-11 show that of the seven modeled tolling scenarios, Tolling Scenario E is projected to have the largest number of stations exceeding thresholds in both the AM and PM peak hours, with a slightly lower number of stations exceeding thresholds under Tolling Scenarios A, D, F, and G. Because Tolling Scenario E projected the highest transit system ridership, it was selected as the tolling scenario for detailed analysis of stations requiring further analysis (except at one location in Newark, New Jersey—for both PATH and NJ TRANSIT—where Tolling Scenario C was selected for its greater station ridership increase). The incremental ridership at stations in the selected tolling scenario (Tolling Scenario E) is comparable to the increments in Tolling Scenarios D and F, and, therefore, representative of those tolling scenarios as well; the incremental increase in ridership in Tolling Scenarios A, B, C, and G are predominantly lower than in Tolling Scenarios D, E, and F.

4C.4.2.3 CHANGE IN RIDERSHIP AND EVALUATION OF LINE-HAUL CAPACITY BY SECTOR

This section assesses the incremental change in ridership (at the boundary of the Manhattan CBD), followed by maximum load point for each sector using the methodologies described in Section 4C.2. Table 4C-9 summarizes the increases across all sectors. Each row of the incremental change tables provided for each of the sectors crossing into the Manhattan CBD represents a particular link to the Manhattan CBD (such as buses entering via the Hugh L. Carey Tunnel, crossing the Brooklyn cordon) and provides the passenger load for the No Action Alternative and CBD Tolling Alternative, as well as the highest incremental change projected for the particular transit line on the representative tolling scenario predicted to result in the largest incremental increase in passenger demand. This series of sector tables presents AM peak period, inbound-only trips crossing the cordon line.

[28 For the Final EA, the Project Sponsors committed to additional mitigation measures (see Chapter 16, "Summary of Effects," Table 16-2). These new mitigation commitments neither require a change in the tolling scenarios used for the analyses in the EA nor change the fundamental conclusions of the EA (see Chapter 3, "Environmental Assessment Framework," Section 3.3.3).]

[29] CEQR identifies a threshold of 200 incremental riders per line as recommending further detailed analysis of line haul capacity (described further in Section 4C.2.1.1).

Table 4C-9. Transit Lines Triggering Detailed Line-Haul Analysis and Average Incremental Ridership Increase Across Tolling Scenarios (AM Peak Hour)

TOLLING SCENARIO	PORT AUTHORITY TRANS-HUDSON (PATH)		NEW YORK CITY TRANSIT SUBWAY		COMMUTER RAIL		BUS		TOTAL
	Number of Lines Exceeding Threshold	Average Incremental Ridership Increase	Number of Lines Exceeding Threshold	Average Incremental Ridership Increase	Number of Lines Exceeding Threshold	Average incremental Ridership Increase	Number of Lines Exceeding Threshold	Average Incremental Ridership Increase	Number of Lines Exceeding Threshold
A	0	—	1	290	0	—	0	—	**1**
B	0	—	1	231	2	296	0	—	**3**
C	0	—	3	244	1	376	0	—	**4**
D	0	—	5	248	3	315	0	—	**8**
E	1	234	5	265	4	282	0	—	**10**
F	0	—	7	249	3	326	0	—	**10**
G	1	242	1	235	1	232	0	—	**3**

Source: WSP, Best Practice Model 2021.
Note: Average incremental ridership increase is the average increase in passengers among stations with hourly passenger increments over the 200 passenger threshold. Following CEQR guidance, subway and commuter rail lines with a projected net hourly increase of 200 or more passengers trigger detailed line-haul analysis. Bus lines with a projected net hourly increase of 50 or more passengers also trigger detailed line-haul analysis.

Table 4C-10. Transit Stations Triggering Detailed Analysis and Average Incremental Ridership Increase Across Tolling Scenarios (AM Peak Hour)

TOLLING SCENARIO	PORT AUTHORITY TRANS-HUDSON (PATH)		NEW YORK CITY TRANSIT SUBWAY		COMMUTER RAIL		TOTAL
	Number of Stations Exceeding Threshold	Average Incremental Ridership Increase	Number of Stations Exceeding Threshold	Average Incremental Ridership Increase	Number of Stations Exceeding Threshold	Average Incremental Ridership Increase	Number of Stations Exceeding Threshold
A	0	—	15	307	2	201	**19**
B	0	—	15	319	3	412	**18**
C	1	240	15	340	4	440	**19**
D	2	223	16	380	3	532	**20**
E	2	290	18	382	3	621	**23**
F	2	268	16	386	4	539	**22**
G	1	266	13	325	4	267	**18**

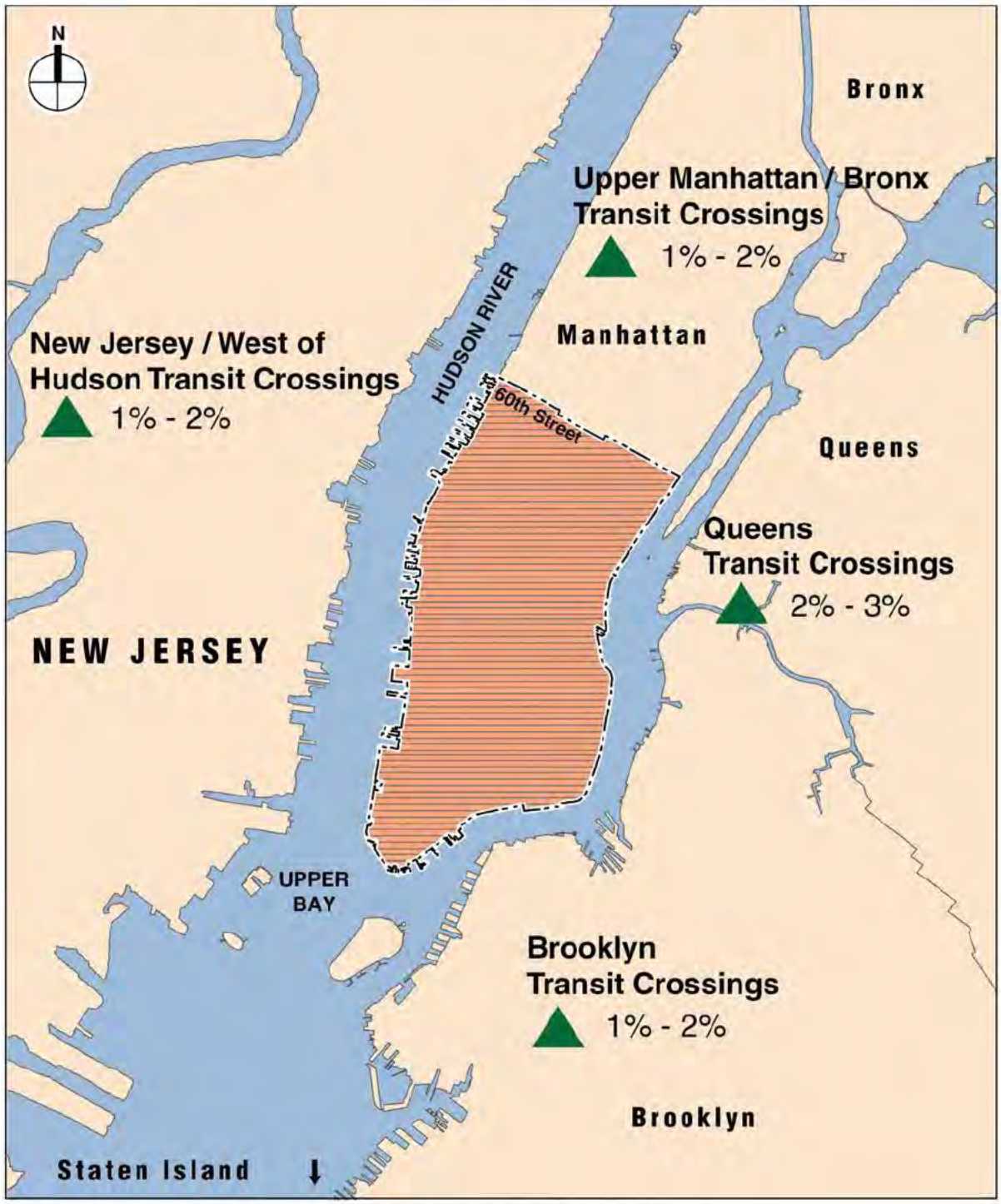
Source: WSP, Best Practice Model 2021.
Note: Average incremental ridership increase is the average increase in passengers among stations with hourly passenger increments over the 200 passenger threshold. Following CEQR guidance, stations with a projected net hourly increase of 200 passengers trigger detailed station analysis. No bus stops triggered detailed analysis.

Table 4C-11. Transit Stations Triggering Detailed Analysis and Average Incremental Ridership Increase Across Tolling Scenarios (PM Peak Hour)

TOLLING SCENARIO	PORT AUTHORITY TRANS-HUDSON (PATH)		NEW YORK CITY TRANSIT SUBWAY		COMMUTER RAIL		TOTAL
	Number of Stations Exceeding Threshold	Average Incremental Ridership Increase	Number of Stations Exceeding Threshold	Average Incremental Ridership Increase	Number of Stations Exceeding Threshold	Average Incremental Ridership Increase	Number of Stations Exceeding Threshold
A	0	—	16	323	2	305	**20**
B	0	—	15	343	3	365	**18**
C	1	259	16	356	4	408	**20**
D	2	241	16	409	3	572	**20**
E	2	313	18	411	3	669	**24**
F	2	289	16	416	4	582	**25**
G	1	287	15	330	4	267	**20**

Source: WSP, Best Practice Model 2021.
Note: Following CEQR guidance, stations with a projected net hourly increase of 200 passengers trigger detailed station analysis.
PM incremental ridership is based on a higher PM peak-hour factor, resulting in slightly different increments than with the AM peak hour in **Table 4C-4**.

Figure 4C-6. Projected Change in Transit Crossings Entering the Manhattan CBD by Sector (2023 AM Peak Period)



Source: WSP, Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019*.
Note: Figure shows range of incremental percentage increases across all tolling scenarios. Tramway volumes were calculated using an incremental change factor derived from Queens/Roosevelt Island sector change per each tolling scenario.

Each sector also includes an assessment of maximum passenger load at the individual line level, based on *CEQR Technical Manual* guidance, which identifies a peak hour within the 4-hour peak period.[30] In these tables, lines are grouped by transit link location, and passenger load per line is associated with the tolling scenario with the highest ridership at the Manhattan CBD boundary. In cases where the line or bus meets the threshold of further analysis based on peak-hour volumes, details on trains or buses per hour, cars per train, and incremental new passengers at these two levels are provided.

Manhattan – 60th Street

With the CBD Tolling Alternative, the number of transit trips crossing into the Manhattan CBD at the 60th Street boundary would increase slightly (in the AM peak period), with an average incremental growth of 2.2 percent across the sector. For most transit lines, the greatest increase would occur under Tolling Scenario E (**Table 4C-12**).

Table 4C-12. Projected Transit Ridership by Route at the Boundary between 60th Street and the Manhattan CBD (2023 AM Peak Period, Inbound)

	NO ACTION ALTERNATIVE	REPRESENTATIVE TOLLING SCENARIO		CHANGE	PERCENTAGE CHANGE
Subway					
Broadway (Nos. 1/2/3)	74,725	76,571	E	1,846	2.5%
Lexington Avenue (Nos. 4/5/6)	89,537	91,610	E	2,073	2.3%
Eighth Avenue (A/C/B/D)	88,153	90,086	E	1,933	2.2%
Second Avenue (Q)	24,502	25,119	E	617	2.5%
Commuter Rail (Metro-North Railroad)					
Hudson, Harlem, New Haven	97,340	99,258	E	1,918	2.0%
Buses					
York Avenue (M31)	282	285	E	3	1.0%
Second Avenue (M15, M15-SBS)	3,032	3,062	E	30	1.0%
Lexington Avenue (BXM1, M101)	1,610	1,626	E	16	1.0%
Fifth Avenue (BXM10, BXM11, BXM18, BXM3, BXM4B, BXM6, BXM7, BXM7A, BXM9, M01, M02, M03, M04)	5,748	5,805	E	57	1.0%
Broadway (BXM2, M05, M07, M10, M104, M20)	1,209	1,221	E	12	1.0%
Columbus Avenue (M11)	314	317	E	3	1.0%
West End Avenue (M57)	315	318	E	3	1.0%
Ferries/Tramway					
Ferries	1,106	1,122	E/F	16	1.5%

Source: WSP, Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019.*
Note: Bus routes listed as identified in BPM. Bus volumes are calculated via average leave load at the bus stop before it crosses into the Manhattan CBD. Amtrak is not included in the BPM for modeled future conditions, because it is not considered a commuter transit choice in the BPM.

[30] In coordination with MTA, an AM peak-hour factor of 26 percent was identified for NYC Transit subway and all bus ridership (and was used for other transit operators as well). Based on identification of the peak-hour per commuter rail operator, a factor of peak-period ridership for the peak hour was derived: 41 percent for LIRR, 43 percent for Metro-North, 43 percent for NJ TRANSIT.

For subways, the lowest percentage change would occur on the Eighth Avenue Line (2.2 percent) and the largest increases would occur on the Broadway and Second Avenue Lines (2.5 percent). Ridership on the Second Avenue Line would increase by the smallest number, though the percentage increase would be within the range of other lines.

Bus ridership would remain largely equivalent to the No Action Alternative, with increases of up to about 120 new riders across the 27 bus lines in the AM peak period (less than 2 percent). No individual bus route for this sector is projected to increase by 50 or more riders in the inbound peak hour. This increase would be below the CEQR threshold for further analysis, and no adverse effects on bus ridership are expected for the representative tolling scenario nor any of the tolling scenarios.

Table 4C-13 presents projected ridership changes on these transit lines at their maximum load point.[31] Three subway lines would exceed the CEQR threshold of an increase of 200 or more passengers in the peak hour, including the No. 1 subway line (projected to increase by 232 passengers), the No. 2 subway line (projected to increase by 210 passengers), and the No. 6 subway line (projected to increase by 288 passengers). The Metro-North commuter lines crossing at 60th Street are also expected to increase by over 200 passengers with an additional 311, 272, and 211 new passengers on the Harlem, Hudson, and New Haven lines, respectively. No other transit lines are projected to exceed 200 passenger increases at the maximum load point, indicating that there would be no adverse effects anticipated as a result of the CBD Tolling Alternative at these locations.

Table 4C-14 provides the additional assessment necessary to evaluate maximum load points that exceed 200 new passengers in the peak hour. The table provides the peak-hour increment broken down into an estimated number of new passengers per train and new passengers per car. CEQR guidance provides that an increase of fewer than 5 passengers per car would be considered as having no adverse effect. Based on the scheduled number of between 6 and 17 peak-hour trains and the standard number of 10 cars per train, the subway lines are projected to have increases of less than 5 passengers with between 1.13 (No. 6 line) and 2.89 (No. 2 line). For Metro-North commuter lines, the range is 1.26 (New Haven) to 2.99 (Hudson) new passengers per car, which is also below the CEQR line-haul capacity criteria for adverse effects. Metro-North scheduled service includes 18 peak-hour trains with an average of 8 cars on the Harlem line, 21 scheduled trains with an average of 8 cars on the New Haven line, and 13 peak-hour trains with an average of 7 cars on the Hudson line. In summary, no adverse effects are anticipated on line-haul for the 60th Street sector.

[31] As noted in Section 4C.2, the maximum load point was calculated for the representative tolling scenario. Additional analysis was conducted for any subway or commuter rail routes where 200 or more new passengers were predicted and for any bus route where 50 or more new bus riders were predicted in the AM peak hour. This was calculated for inbound passenger volumes destined for the Manhattan CBD.

Table 4C-13. Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD at the 60th Street Boundary, (2023 AM Peak Period and Hour)

MODE	NEW PASSENGER-TRIPS	
	Peak Period	Peak Hour
Subway		
Broadway		
No. 1	892	232
No. 2	807	210
No. 3	530	138
Lexington Avenue		
No. 4	558	145
No. 5	348	90
No. 6	870	226
Eighth Avenue		
A	690	179
B	387	101
C	220	57
D	636	165
Second Avenue (Q)	603	157
Commuter Rail (Metro-North Railroad)		
Harlem	722	311
Hudson	632	272
New Haven	494	212
Buses		
York Avenue *(1 route)*	9	2
Second Avenue *(2 routes)*	48	12
Lexington Avenue *(4 routes)*	38	10
Fifth Avenue *(13 routes)*	103	27
Broadway *(4 routes)*	29	7
Columbus Avenue *(1 route)*	7	2
West End Avenue *(1 route)*	8	2

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: MTA NYCT data was used to analyze maximum load points for bus routes as of 2019. The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-12.**

Table 4C-14. Projected Incremental Ridership Increases at Maximum Load Point for Routes Crossing into the Manhattan CBD at the 60th Street Boundary (2023 AM Peak Hour)

MODE	NEW PASSENGER-TRIPS		SCHEDULED TRAINS		NEW PASSENGER-TRIPS	
	Peak Period	Peak Hour	Trips/Hour	Cars/Train	Per Train	Per Car
Subway						
No. 1	892	232	19	10	13.64	1.36
No. 2	628	210	12	10	28.88	2.89
No. 6	870	226	20	10	11.31	1.13
Commuter Rail (Metro-North Railroad)						
Harlem	722	311	18	8	17.26	2.16
Hudson	632	272	13	7	20.92	2.99
New Haven	494	229	21	8	10.12	1.26

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-12**.

Queens/Roosevelt Island

With the CBD Tolling Alternative, in 2023 subway trips from Queens are projected to increase by less than 5 percent in the AM peak period in all tolling scenarios, with most subway lines having the largest increase in ridership under Tolling Scenario E. The N/R/W subway corridor would see the largest percentage increase (3.3 percent) at the boundary with the Manhattan CBD, which translates to 1,609 new riders, and the E/M subway lines would have the largest increase in numbers of passengers, with 1,889 new passengers between the two routes (an increase of 2.4 percent) (**Table 4C-15**).

Table 4C-15. Projected Transit Ridership at the Boundary between Queens/Roosevelt Island and the Manhattan CBD (2023 AM Peak Period, Inbound)

	NO ACTION ALTERNATIVE	REPRESENTATIVE TOLLING SCENARIO		CHANGE	PERCENTAGE CHANGE
Subway					
60th Street Tunnel (N/R/W)	48,940	50,548	E	1,609	3.3%
53rd Street Tunnel (E/M)	78,555	80,444	E	1,889	2.4%
Steinway Tunnel (No. 7)	68,283	70,122	E	1,839	2.7%
63rd Street Tunnel (F)	53,897	54,970	E	1,073	2.0%
Commuter Rail (Long Island Rail Road)					
All Routes	83,870	85,825	E	1,955	2.3%
Buses					
Queens-Midtown Tunnel* (BQM1, BM5, QM1, QM1A,QM2, QM3 QM4, QM5, QM6, QM7, QM8, QM10, QM11, QM12, QM15, QM16, QM17, QM18, QM20, QM21, QM24, QM25, QM31, QM32, QM34, QM35, QM36, X63, X64, X68)	8,601	8,695	E	94	1.1%
Ed Koch Queensboro Bridge (Q101, Q32, Q60)	777	786	E	9	1.1%
Ferries/Tramway					
Ferries	5,561	5,733	E	172	3.1%
Roosevelt Island Tramway**	859	878	E	22	2.6%

Source: WSP, Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019.*

Note: Bus routes are listed as identified in the BPM. Bus volumes are calculated via average leave load at the bus stop before it crosses into the Manhattan CBD. Amtrak is not included in the BPM for modeled future conditions, because it is not considered a commuter transit choice in the BPM.

* Forecasts for Queens-Midtown Tunnel ridership have been estimated from the *Hub Bound Travel Data Report 2019* using the growth factor for all bus boardings per tolling scenario.

** Forecasts for ridership on the Roosevelt Island Tramway have been estimated using a growth factor based on a rate calculated using historic data collected through NYMTC. Tolling scenario ridership projections were based on the rate of change for all transit in the sector as modeled in the BPM.

Bus routes that enter the Manhattan CBD from Queens/Roosevelt Island would see the greatest ridership increases under Tolling Scenarios E and F. These routes are projected to increase by a relatively small number of passengers; buses crossing the Queens-Midtown Tunnel and Ed Koch Queensboro Bridge are not projected to see an increase of 50 or more new passengers. For LIRR ridership, the greatest rate of change would occur with Tolling Scenario E. Ferry trips and the Roosevelt Island Tramway would play a smaller role in the transportation system for trips entering the Manhattan CBD from the Queens/Roosevelt Island sector.

Table 4C-16 shows the increment at the maximum load point for each transit line entering the Manhattan CBD, and Table 4C-17 shows the results of the detailed analysis of line-haul capacity for transit lines. Each line on the N/R/W corridor from Queens/Roosevelt Island would not have an increase of more than 200 passengers in the peak hour and therefore do not warrant further analysis. Three subway lines connecting Queens to the Manhattan CBD would exceed the threshold of 200 new passengers in the AM peak hour. The E subway line ridership is projected to increase by 228 passengers, which would be 1.52 new passengers per car. The M subway line ridership, projected to increase by 264 passengers, would add 2.93 passengers per car. The additional 279 passengers on the F subway line would translate to 1.86 new passengers per car, which is lower than the impact threshold of 5 or more new passengers per car. The No. 7 local subway line is projected to increase by 377 riders in the AM peak hour—equivalent to 2.45 new passengers per car, which would be lower than the threshold for an adverse effect. For the LIRR, only the Babylon Branch with 331 new peak-hour passengers is projected to have an increase of greater than 200 passengers. Based on the scheduled 10 trains in the peak hour with an average of 10 cars per train, this results in 3.31 new passengers per car on average, which remains below the adverse effect threshold of 5 new passengers per car. No bus routes from Queens are projected to increase by over 50 passengers. In summary, none of the passenger increases on transit lines from Queens/Roosevelt Island would result in an adverse effect.

Table 4C-15. Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD from Queens/Roosevelt Island, (2023 AM Peak Hour)

MODE	PEAK PERIOD	AM PEAK HOUR
Subway		
60th Street Tunnel (R)	657	171
60th Street Tunnel		
N	386	100
W	369	96
53rd Street Tunnel		
M	1,014	264
E	876	228
Steinway Tunnel		
No. 7 (Local)	1,449	377
No. 7 (Express)	600	156
63rd Street Tunnel (F)	1,073	279
Commuter Rail (Long Island Rail Road)		
Babylon	808	331
Far Rockaway	147	60
Hempstead	127	52
Long Beach	50	20
Montauk	18	8
Oyster Bay	32	13
Port Jefferson	276	113
Port Washington	368	151
Ronkonkoma	232	95
West Hempstead	0	0
Buses		
Queens-Midtown Tunnel *(33 routes)*	94	25
Ed Koch Queensboro Bridge *(3 routes)*	41	11

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-15**. The projected ridership changes have been rounded to zero (0) for estimates at or below zero, to account for variability/noise in the BPM for lines where existing ridership is already relatively low. MTA NYCT data was used to analyze maximum load points for bus routes as of 2019.

Table 4C-16. Projected Incremental Ridership Increases at Maximum Load Point for Queens/Roosevelt Island (2023 AM Peak Hour)

MODE	NEW PASSENGER-TRIPS		SCHEDULED TRAINS		NEW PASSENGER-TRIPS	
	Peak Period	Peak Hour	*Trips/Hour*	*Cars/Train*	Per Train	Per Car
Subway						
53rd Street Tunnel						
M	1,014	264	9	10	29.28	1.93
E	876	228	15	10	15.18	1.52
Steinway Tunnel						
No. 7 (Local)	1,449	377	14	11	26.90	2.45
63rd Street Tunnel (F)	1,073	279	15	10	18.60	1.86
Commuter Rail (Long Island Rail Road)						
Babylon	808	331	10	10	33.1	3.31

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-15**. Because no bus routes met the threshold of 50 new passengers, none are included in this table.

Brooklyn

With the CBD Tolling Alternative, subway, ferry and bus ridership between Brooklyn and the Manhattan CBD would see increases under all tolling scenarios (**Table 4C-18**). These increases would be less than 4 percent on any given subway line or ferry and approximately 6 percent for buses. During the AM peak period, Tolling Scenario F would increase subway ridership from Brooklyn the most (although the tolling scenario projections would have limited variation). Projected incremental passengers range from 1.3 to 2.7 percent for subway lines. The largest increases in bus ridership would occur under Tolling Scenario B with 136 riders (a nearly 9 percent increase).

Table 4C-17. Projected Transit Ridership by Routes at the Boundary between Brooklyn and the Manhattan CBD (2023 AM Peak Period, Inbound)

	NO ACTION ALTERNATIVE	REPRESENTATIVE TOLLING SCENARIO		CHANGE	PERCENTAGE CHANGE
Subway					
Canarsie Tunnel (L)	42,607	43,583	F	976	2.3%
Williamsburg Bridge (J/M/Z)	37,216	38,411	F	1,195	3.2%
Rutgers Street Tunnel (F)	37,006	37,921	F	915	2.5%
Manhattan Bridge (B/D/N/Q)	100,921	103,654	D	2,734	2.7%
Cranberry Street Tunnel (A/C)	66,013	67,173	F	1,160	1.8%
Clark Street Tunnel (Nos. 2/3)	29,316	30,073	E	757	2.6%
Montague Street Tunnel (R)	10,143	10,301	F	158	1.6%
Joralemon Street Tunnel (Nos. 4/5)	28,696	29,446	D	750	2.6%
Buses					
Hugh L. Carey Tunnel (BM1, BM2, BM3, BM4)	4,376	4,421	B	45	1.0%
Williamsburg Bridge (B39)	29	29	B	0	1.0%
Ferries/Tramway					
Ferries	3,462	3,513	F	51	1.5%

Source: WSP, Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019*; analysis prepared by WSP and FHI Studio.

Note: MTA NYCT data was used to analyze bus routes as of 2019. Bus volumes are calculated via average leave load at a bus stop before a bus crosses into the Manhattan CBD.

No bus routes with an origin point in Brooklyn are projected to see an increase of more than 50 new passengers in the AM peak hour, the CEQR threshold for further analysis, indicating that there would be no adverse effect from the change in ridership.

As summarized in **Table 4C-19**, the A, D, F, and L subway lines are projected to have an increase of more than 200 riders in the AM peak hour, while the incremental change would be below 200 riders for the Manhattan-bound Nos. 2/3; Nos. 4/5; and C, J/M, N/Q, and R subway lines.

Table 4C-18. Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD from Brooklyn (2023 AM Peak Period and Hour)

MODE	AM PEAK PERIOD	AM PEAK HOUR
Subway		
Clark Street Tunnel		
No. 2	165	43
No. 3	345	90
Joralemon Street Tunnel		
No. 4	664	173
No. 5	588	153
Cranberry Street Tunnel		
A	859	224
C	334	87
Rutgers Street Tunnel (F)	1,033	269
Canarsie Tunnel (L)	976	254
Williamsburg Bridge		
J	674	175
M	502	130
Manhattan Bridge		
B	616	160
D	867	226
N	634	165
Q	685	178
Montague Street Tunnel (R)	640	166
Buses		
Hugh L. Carey Tunnel *(6 routes)*	45	12
Williamsburg Bridge *(1 route)*	0	0

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: MTA NYCT data was used to analyze maximum load points for bus routes as of 2019. The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-17**.

Table 4C-20 summarizes the maximum load point analysis for the four subway lines exceeding the 200-passenger increase in the AM peak hour:

- The A subway line with a projected increase of 224 passengers and 1.64 new passengers per subway car on average
- The D subway line with 226 new passengers or about 2.82 per car
- The F subway line with 269 new passengers or 2.07 per car
- The L subway line with 254 new passengers or 1.59 per car

These increases are all below the threshold increment of 5 or more new passengers per car, and there would be no anticipated adverse effect on any transit lines entering the Manhattan CBD from Brooklyn.

Table 4C-19. Projected Incremental Ridership Increases at Maximum Load Point for Brooklyn (2023 AM Peak Hour)

MODE	NEW PASSENGER-TRIPS		SCHEDULED TRAINS		NEW PASSENGER-TRIPS	
	Peak Period	Peak Hour	Trips/Hour	Cars/Train	Per Train	Per Car
Subway						
Cranberry Street Tunnel (A)	858	224	17	8	13.13	1.64
Rutgers Street Tunnel (F)	1,033	269	13	10	20.67	2.07
Canarsie Tunnel (L)	976	254	20	8	12.69	1.59
Manhattan Bridge (D)	867	226	10	8	28.18	2.82

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-17**. Because no bus routes met the threshold of 50 new passengers, none are included in this table.

Staten Island

With the CBD Tolling Alternative, passenger-trips by ferry from Staten Island to the Manhattan CBD during the AM peak period are projected to increase by about 7 percent under the representative tolling scenario (**Table 4C-21**). Many of these passengers could be transferring to buses and subways in the Manhattan CBD, which is accounted for in the BPM results.

Table 4C-20. Projected Transit Ridership by Routes Crossing into the Manhattan CBD from Staten Island (2023 AM Peak Period, Inbound)

	NO ACTION	REPRESENTATIVE TOLLING SCENARIO		CHANGE	PERCENTAGE CHANGE
Ferry	17,768	19,002	C	1,234	6.9%
Buses					
Hugh L. Carey Tunnel (SIM1, SIM2, SIM3, SIM4, SIM5, SIM6, SIM7, SIM9, SIM10, SIM11, SIM15, SIM31, SIM31, SIM32, SIM33, SIM34, SIM35)	10,236	10,837	C	601	5.9%
Lincoln Tunnel (SIM8, SIM22, SIM25, SIM26, SIM30)	2,906	3,049	C	143	4.9%

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: MTA NYCT data was used to analyze bus routes as of 2019. (Staten Island Express Bus Routes SIM23 and SIM24 were operated by Academy Bus Company via contract with the New York City Economic Development Corporation in 2019, but as of January 2022, the routes are now operated by MTA Bus.) Bus volumes are calculated via the average leave load at the bus stop before it crosses into the Manhattan CBD. Due to rounding, some numbers in this table may not add up.

Ridership on express bus routes from Staten Island via New Jersey would increase under the representative tolling scenario, with an increase of 5.9 percent on buses via Brooklyn and 4.9 percent on buses via New Jersey. This translates to fewer than 50 new passengers on all buses; no bus routes with an origin point in Staten Island are projected to see an increase of more than 50 new passengers in the AM peak hour. Therefore, no adverse effects are anticipated from the representative tolling scenario nor any of the CBD Tolling Alternative scenarios.

The Staten Island Ferry serves commuters who transfer from the Staten Island Railway or from local buses, who bike or walk to the ferry terminal, and who arrive by vehicle. Rides on the ferry are also a popular tourist activity. It is expected that ridership on the new NYC Ferry St. George route (launched in 2021) would divert some travelers who previously used the Staten Island Ferry, because the NYC Ferry would provide a convenient connection to western Midtown Manhattan for some commuters in place of a transfer to the subway in Lower Manhattan to reach Midtown. No adverse effects on Staten Island Ferry service levels are expected as a result of the CBD Tolling Alternative.[32]

Table 4C-22 shows the increment at the maximum load point for Staten Island express buses that travel within Brooklyn and New Jersey to enter the Manhattan CBD. No bus routes within this sector are projected to experience over 50 new passengers.

Table 4C-21. Projected New Passenger-Trips at Maximum Load Point for Staten Island Express Bus Routes (2023 AM Peak Period and Hour)

MODE	AM PEAK PERIOD	AM PEAK HOUR
Bus		
Staten Island express via Hugh L. Carey Tunnel *(16 routes)*	447	116
Staten Island express via Lincoln Tunnel *(5 routes)*	66	17

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: MTA NYCT data was used to analyze maximum load points for bus routes as of 2019. The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-20**.

New Jersey/West of Hudson

The CBD Tolling Alternative would result in modest increases in ridership on transit services from the New Jersey/west-of-Hudson sector (**Table 4C-23**). The largest change as a percentage, would occur on PATH service to Midtown Manhattan (33rd Street), which would see 1,555 new passengers in the AM peak period with Tolling Scenario E, an increase of 3.8 percent. PATH service to Lower Manhattan (World Trade Center) would have a smaller increase, with an estimated 1,201 new passengers in the AM peak period (an increase of 1.7 percent). Ridership would increase by 2.3 percent under Tolling Scenario E for NJ TRANSIT rail service. For buses from New Jersey, ridership would increase less than 2 percent, with 1,656 new passengers on buses through the Lincoln and Holland Tunnels with the representative tolling scenario for each (Tolling Scenarios E and D, respectively). Privately operated ferries would see the greatest increases under Tolling Scenario D, with a projected increase of 207 new passengers.

[32] Based on an analysis of the projected increase in morning peak hour ridership on the Staten Island Ferry and based on the capacity of each ferry and the frequency of operation, adverse effects are not anticipated from the Project.

Table 4C-22. Projected Transit Ridership by Routes at the Boundary between New Jersey/West-of-Hudson and Manhattan CBD (2023 AM Peak Period, Inbound)

	NO ACTION	REPRESENTATIVE TOLLING SCENARIO		CHANGE	PERCENTAGE CHANGE
Subway					
PATH (33rd Street)	40,731	42,286	E	1,555	3.8%
PATH (World Trade Center)	71,773	72,974	F	1,201	1.7%
Commuter Rail					
NJ TRANSIT	59,721	61,068	E	1,348	2.3%
Buses					
Lincoln Tunnel*	106,849	108,390	E	1,541	1.4%
Holland Tunnel*	6,431	6,547	D	116	1.8%
Ferries/Tramway					
Ferries	8,123	8,329	D	207	2.5%

Source: WSP, Best Practice Model 2021 and NYMTC *Hub Bound Travel Data Report 2019;* analysis prepared by WSP and FHI Studio.

Note: Metro-North west-of-Hudson service connects to the Manhattan CBD via a transfer at Secaucus Junction. Those riders represent a small proportion of total west-of-Hudson trips and are included under the Commuter Rail/NJ TRANSIT classification in these results summaries.

* Bus routes listed as identified in BPM:
NJ TRANSIT Lincoln Tunnel: #107, #108, #112, #113, #114, #115, #116, #117, #119, #122, #123, #125, #126, #127, #128, #129, #130, #131, #132, #133, #135, #136, #137, #138, #139, #144, #145, #148, #151, #153, #154, #155, #156, #157, #158, #159, #160, #161, #162, #163, #164, #165, #166, #167, #168, #177, #190, #191, #192, #193, #194, #195, #196, #197, #199, #319, #320, #321, #324
NJ TRANSIT Holland Tunnel: #120
Other Carriers Lincoln Tunnel: Bergen County/Suffern, CC Route 77, DC Route 32, DC Route 33, DC Route 44, DC Route 66, DC Route 88, DC Route 99, Jackson – Midtown, Jackson – PABT, Lincroft/Exit 109 – PABT, LK 46/80 to PABT, LK 46/80 to Wall St., LK 78 to PABT, LK 80 to PABT, Monsey – Midtown, MZ, Orange – Chester/Midtown, Orange – Newburgh/West Pt, Orange xPA84, Palisades, Pkwy Exp – PABT, PNC Center – PABT, Route 100 to PABT, Route 300/8A to Midtown, Route 300/8A to PABT, Route 35 – PABT, Route 36 – PABT, Route 400 Express to PABT, Route 500 to Midtown, Route 55 – Bloomfield, RT 11A, Rt 14 – PABT, RT 20 – PABT, RT 21, RT 45, RT 46, RT 47, RT 49, RT 9 – PABT, Sayreville – Midtown, TB North, TB South
Other Carriers Holland Tunnel: Jackson – Downtown, Lincroft/Exit 109 – Wall St, Pkwy Exp – Wall St, PNC Center, Red Bank, Route 300/8A, Route 36 – Wall St, Route 600 to Wall St, Route 9 to Wall St, Sayreville – Wall St, TB North to Wall St, West Caldwell

Table 4C-24 shows the increment of passengers at the maximum load point for transit lines entering the Manhattan CBD via New Jersey. The 33rd Street PATH line from Hoboken would have an increase of 234 new passengers in the AM peak hour, which is above the CEQR 200 passenger increase per peak-hour threshold for line-haul analysis. Based on BPM results, no bus routes would have increases of more than 50 new passengers in the AM peak hour in the representative tolling scenario.[33] Although total NJ TRANSIT commuter rail ridership would increase by more than 200 passengers overall, no individual routes would increase by more than 200 new passengers.

[33] Although the BPM projects ridership for individual routes, these route-specific projections do not have a high level of accuracy; therefore, increases are discussed relative to the route "family" for this assessment, although it is likely that route patterns do not all cover all bus stops for the route family.

Table 4C-23. Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD from New Jersey/West of Hudson (2023 AM Peak Period and Peak Hour)

MODE	AM PEAK PERIOD	AM PEAK HOUR
Subway		
PATH (33rd Street)		
Hoboken Line	898	234
Journal Square Line	657	171
PATH (World Trade Center)		
Hoboken Line	605	157
Newark Line	596	155
Commuter Rail (NJ TRANSIT)*		
Montclair-Boonton Line	305	125
Morris & Essex Line	273	112
Northeast Corridor Line	420	172
North Jersey Coast Line	309	127
Buses		
Lincoln Tunnel (104 routes)	1,462	380
Holland Tunnel (13 routes)	91	24

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-22**.
* Metro-North west-of-Hudson commuter trains (Port Jervis, Pascack Valley) transfer at Secaucus Junction to enter the Manhattan CBD and are therefore incorporated into NJ TRANSIT incremental passenger-trips.

As shown in **Table 4C-25**, the increases on the PATH 33rd Street Hoboken line are estimated to result in an average increase of about 3.34 new passengers per car, which is below the 5-passenger threshold, indicating that there would be no adverse effect. In summary, no transit line originating in New Jersey would result in an adverse effect on maximum load point for the representative tolling scenario and, therefore, for any tolling scenario.

Table 4C-24. Projected Incremental Ridership Increases at Maximum Load Point for New Jersey/West of Hudson (2023 AM Peak Hour)

MODE	NEW PASSENGER-TRIPS		SCHEDULED BUSES/TRAINS		NEW PASSENGER-TRIPS	
	Peak Period	Peak Hour	Trips/Hour	Cars/Train	Per Train/Bus	Per Car
Subway						
PATH (33rd Street)						
Hoboken	898	234	10	7	23.35	3.34

Source: WSP, Best Practice Model 2021; analysis prepared by WSP and FHI Studio.
Note: The tolling scenario used to derive this analysis matches the representative tolling scenario in **Table 4C-22**.

4C.4.2.4 EVALUATION OF BUSES ACROSS SECTORS

In early public outreach, concerns regarding increases in bus ridership that could result from Project implementation were expressed. Commenters asked if additional buses would be needed to account for ridership increases. Based on the line-haul capacity analysis results, which examined bus ridership at the point where the route would be the most crowded, no buses would cross the threshold for requiring detailed line-haul analysis; therefore, no adverse effects on bus lines are projected. This means that no new buses would be required to support ridership increases stemming from the Project.

Local Bus Ridership

As shown in **Table 4C-26**, overall bus ridership is projected to increase slightly due to the Project, from 1.0 percent (in Tolling Scenario B) to 1.4 percent (in Tolling Scenarios E and F). The analysis considered the change in overall bus ridership due to the Project, examining the aggregation of bus ridership into three groupings or categories of bus routes: "cordon" bus routes (which pass through the Manhattan CBD tolling cordon or boundary); "feeder" bus routes (which serve at least one rail station); and "local" bus routes (which do not cross the Manhattan CBD cordon or serve a rail station).

Table 4C-25. Projected Change in Bus Ridership Among Scenarios Compared to No Action Alternative (2023 AM Peak Period)

TYPE OF BUS ROUTE	TOLLING SCENARIO A	TOLLING SCENARIO B	TOLLING SCENARIO C	TOLLING SCENARIO D	TOLLING SCENARIO E	TOLLING SCENARIO F	TOLLING SCENARIO G
Change in ridership vs. No Action Alternative							
Cordon bus routes	4,554	3,657	5.543	6,470	7,806	6,105	4,886
Feeder bus routes	23,813	23,577	28,877	27,523	29,047	29,770	23,082
Local bus routes	977	681	676	748	977	1,159	741
Total Change vs. No Action Alternative	**29,345**	**27,916**	**35,097**	**34,742**	**37,830**	**37,034**	**28,709**
Percentage change in ridership vs. No Action Alternative							
Cordon bus routes	1.0%	0.8%	1.2%	1.4%	1.6%	1.3%	1.0%
Feeder bus routes	1.1%	1.1%	1.4%	1.3%	1.4%	1.4%	1.1%
Local bus routes	1.2%	0.8%	0.8%	0.9%	1.2%	1.4%	0.9%
Total Change vs. No Action Alternative	**1.1%**	**1.0%**	**1.3%**	**1.3%**	**1.4%**	**1.4%**	**1.1%**

Source: WSP, Best Practice Model 2021.
Note: Data total over a 4-hour period, defined as total boardings, which include transfers. (Because this ridership estimate includes transfers, the ridership reported is greater than MTA NYCT MetroCard data that is widely available.) The BPM includes MTA buses, NJ TRANSIT buses, smaller regional bus carriers, and private carriers. (Other smaller carriers and private carriers are included under "Other Buses.")

Based on BPM results for 2023, the projected systemwide increases in bus ridership for the morning peak period across the seven tolling scenarios (A, B, C, D, E, F, and G) would range between 0.7 and 1.6 percent for cordon, feeder, and local bus routes. For any given tolling scenario, local buses routes would mostly have a lower percentage increase than feeder or cordon routes. Under Tolling Scenario A, B, and F, some local bus routes would have a higher percentage increase than feeder routes, or both feeder and cordon routes.

With each bus accommodating 54 to 85 passengers, such increases would, on average, amount to no more than one or two additional passengers per bus. This level of increase in bus ridership is generally imperceptible and is anticipated as a 1.0 to 1.4 percent average increase, systemwide.

A closer look was taken at subway stations that may serve as important transfer points between buses and subways, to examine whether the increased bus ridership could be more pronounced at those locations. Twenty-three subway stations (see Table 4C-27 and Table 4C-28) are projected to serve more than 200 additional passengers in the AM peak hour under the CBD Tolling Alternative. Five stations outside Manhattan are projected to see increases above the 200-passenger increment threshold (Court Square, Atlantic Av – Barclays Center, Flushing-Main Street, Broadway Junction, 168 St – Washington Heights), with increments between 204 and 332 in the AM peak hour.

At most of the 23 subway stations identified above, based on inputs from NYCT operations planners, approximately 10 percent of the total increment of subway passengers would be a result of transfers to/from buses. This proportion was applied to estimate the amount of passenger volumes attributed to bus-to-subway or subway-to-bus transfers that would traverse station fare control area and vertical circulation elements.

4C.4.2.5 TRANSIT STATION ASSESSMENT

This section provides an assessment of the CBD Tolling Alternative's effect on specific transit stations where the number of passengers would exceed the CEQR threshold of 200 incremental peak-hour passengers. As indicated in Section 4C.4.2, this assessment uses Tolling Scenario E as the representative tolling scenario with the largest increase in transit ridership overall relative to the No Action Alternative. The results of this analysis provide an understanding of the likely range of anticipated adverse effects from the proposed Project and identify potential improvement strategies to address these effects.

Under the CBD Tolling Alternative, the regional transit system is projected to see overall increases of under 2 percent increase although ridership increases would vary by mode and station. This analysis considers whether projected increases in passenger volumes at specific stations would adversely affect facility elements used by passengers and whether improvements at those stations would be necessary to avoid potential adverse effects.

According to the *CEQR Technical Manual,* transit station analyses may be warranted if a proposed project is expected to generate 200 new passenger movements in a peak hour at a given station. Based on BPM results for 2023, the transit stations where the CBD Tolling Alternative (Tolling Scenario E) would add more than 200 new passengers during the peak hour (including all transfers, boardings, and alightings) were identified. Passengers transferring between cross-platform lines were not included because transferring passengers would not interact with FCA and VCE station circulation elements (turnstiles, stairs, escalators). However, transfers to another line within the same station complex or transfers to/from bus routes outside of the station were included because these incremental movements could affect the function of station circulation elements.

Locations of Stations Exceeding Threshold

Based on the BPM results for 2023, 26 commuter rail and subway stations are projected to have ridership increases of more than 200 new passengers with most stations located within New York City. For locations where the CEQR screening assessment indicates that further analysis is warranted, the *CEQR Technical Manual* calls for evaluation of capacity of the notable FCA and VCE station elements in the path of travel. Table 4C-27 shows projected AM peak-hour increments, and Table 4C-28 provides the corresponding PM peak-hour increments. (PM increments were estimated in coordination with NYCT by applying a different peak-hour factor onto the BPM AM peak-period results.)

Five of the stations meeting the threshold are affiliated with cross-Hudson trips—either in New Jersey or the Manhattan CBD. In New Jersey, three transit stations would have an increase of more than 200 passengers: Secaucus Junction Station, Hoboken Terminal, and Newark Penn Station. The other two stations are at New Jersey-serving hubs inside the Manhattan CBD. At Secaucus—one of a few major transfer points between northern New Jersey and Rockland and Orange Counties, New York—commuters primarily transfer rather than enter the station from the street. Hoboken Terminal is an important transfer point between PATH and NJ TRANSIT, where the increase in ridership would be fairly evenly split between the two services). At Newark Penn Station, a major hub and transfer station for NJ TRANSIT train and bus service and PATH, the CBD Tolling Alternative would also add a projected 148 new passengers for PATH and 181 passengers for NJ TRANSIT.

The increases at each of these hubs also include a substantial transfer volume. Of the 23 stations where the new passengers resulting from the CBD Tolling Alternative would exceed the screening threshold within New York City, nearly two-thirds are within the Manhattan CBD (Figure 4C-7). In addition, four stations are in Queens, two are in Brooklyn, and two are in Upper Manhattan/the Bronx (Table 4C-27). At some of these stations, planned or programmed improvements independent of the CBD Tolling Alternative will increase station capacity. Measures to be implemented by private developers related to the City of New York's recent rezoning of East Midtown will provide capacity improvements at some East Side subway stations. Other MTA capital improvements are planned at various stations which may alleviate relatively minor ridership increases.

Among those identified to incur incremental trips exceeding the CEQR analysis threshold, the largest increases are expected to occur at the Manhattan CBD's large station complexes. These stations accommodate substantial transfer movements among different subway lines that serve various parts of the city. They also accommodate intermodal transfers, in the case of Grand Central Terminal and Penn Station New York with commuter rail lines, and in the case of Times Square with commuter bus routes that serve the greater metropolitan area.

Table 4C-26. Transit Stations with More than 200 Projected New Passengers in the AM Peak Hour (Tolling Scenario E, 2023)

STATION NAME	OPERATOR	LINE	NO ACTION Ons/Offs	TOLLING SCENARIO E Ons/Offs	NET ONS/OFFS	NET PERCENTAGE CHANGE	LOCATION
New York-Penn Station	LIRR/NJ TRANSIT	—	61,663	63,043	1,380	2.2%	Manhattan CBD
Times Sq-42 St/42 St-Port Authority Bus Terminal	NYCT	Nos. 1, 2, 3, 7, and A, C, E, N, Q, R, S, W	67,299	68,655	790	1.2%	Manhattan CBD
Grand Central-42 St	NYCT	Nos. 4, 5, 6, 7, and S	40,779	41,858	761	1.9%	Manhattan CBD
New York-Grand Central Terminal	Metro-North	—	42,262	43,301	619	1.4%	Manhattan CBD
14 St-Union Square	NYCT	Nos. 4, 5, 6, and L, N, Q, R, W	40,216	41,263	585	1.5%	Manhattan CBD
Secaucus	NJ TRANSIT	—	10,279	10,834	555	5.4%	New Jersey
Hoboken Terminal	NJ TRANSIT	—	10,000	10,501	501	5.0%	New Jersey
Fulton St	NYCT	Nos. 2, 3, 4, 5, and A, C, J, Z	19,681	20,242	495	2.5%	Manhattan CBD
Lexington Av/59 St	NYCT	Nos. 4, 5, 6, and N, R, W	34,441	35,181	455	1.3%	Manhattan CBD
Lexington Av/53 St – 51 St	NYCT	No. 6, and E, M	15,758	16,205	395	2.5%	Manhattan CBD
42 St-Bryant Park-5 Av	NYCT	No. 7, and B, D, F, M	23,759	24,291	342	1.4%	Manhattan CBD
Broadway-Lafayette St and Bleecker St	NYCT	No. 6, and B, D, F, M	25,368	25,991	341	1.3%	Manhattan CBD
Court Square	NYCT	No. 7, and E, G, M	21,824	22,330	332	1.5%	Queens
59 St-Columbus Circle	NYCT	No. 1, and A, B, C, D	36,042	36,727	326	0.9%	Manhattan CBD
34 St-Herald Sq	NYCT	B, D, F, M, N, Q, R, W	30,662	31,230	319	1.0%	Manhattan CBD
Hoboken Terminal (PATH)	PANYNJ	—	7,433	7,749	316	4.2%	New Jersey
Atlantic Av-Barclays Center	NYCT	Nos. 2, 3, 4, 5, and B, Q, D, N, R	34,379	35,016	313	0.9%	Brooklyn
Port Authority Bus Terminal	PANYNJ	—	23,393	23,694	301	1.3%	Manhattan CBD
14 St (Sixth Av/Seventh Av)	NYCT	No. 1, 2, 3, and F, M, L	18,085	18,476	268	1.5%	Manhattan CBD
World Trade Center Station	PANYNJ	—	20,864	21,129	264	1.3%	Manhattan CBD
Flushing-Main St	NYCT	No. 7	14,839	15,100	261	1.8%	Queens
Broadway Junction	NYCT	A, C, J, L, Z	20,441	20,888	245	1.2%	Queens
Canal St (6, J, N, Q, R, Z)	NYCT	No. 6, and N, Q, R, W, J, Z	11,000	11,283	230	2.1%	Manhattan CBD
34 St-Penn Station	NYCT	A, C, E	12,321	12,553	213	1.7%	Manhattan CBD

STATION NAME	OPERATOR	LINE	NO ACTION Ons/Offs	TOLLING SCENARIO E Ons/Offs	NET ONS/OFFS	NET PERCENTAGE CHANGE	LOCATION
168 St-Washington Heights	NYCT	No. 1, and A, C	11,155	11,437	204	2.5%	Manhattan
Newark Penn Station	NJ TRANSIT	—	20,390	20,571	181	0.9%	New Jersey
Newark Penn Station (PATH)	PANYNJ	—	9505	9,653	148	1.6%	New Jersey

Source: WSP, Best Practice Model 2021.
Note: All stations with free connections have aggregated volumes. Peak-hour incremental change was calculated as an average 26 percent peak-hour to peak-period ratio in the AM for NYCT subways, PATH trains, and buses; 43 percent peak-hour to peak-period ratio for Metro-North and NJ TRANSIT; and 41 percent peak-hour to peak-period ratio for LIRR. Net ons/offs include subway-to-bus, subway-to-subway, and bus-to-subway transfers and is not a direct calculation of Tolling Scenario E minus No Action Alternative incremental trips.

Table 4C-27. Transit Stations with More than 200 Projected New Passengers in the PM Peak Hour (Tolling Scenario E, 2023)

STATION NAME	OPERATOR	LINE	NO ACTION Ons/Offs	TOLLING SCENARIO E Ons/Offs	NET ONS/OFFS	NET PERCENTAGE CHANGE	LOCATION
New York-Penn Station	LIRR/NJ TRANSIT	—	61,663	63,043	1,380	2.2%	Manhattan CBD
Times Sq-42 St/42 St-Port Authority Bus Terminal	NYCT	Nos. 1, 2, 3, 7 and A, C, E, N, Q, R, S, W	72,476	73,936	851	1.2%	Manhattan CBD
Grand Central-42 St	NYCT	Nos. 4, 5, 6, 7 and S	43,916	45,078	820	1.8%	Manhattan CBD
14 St-Union Square	NYCT	Nos. 4, 5, 6, and L, N, Q, R, W	43,309	44,437	630	1.4%	Manhattan CBD
Grand Central Terminal	Metro-North	—	42,682	43,301	619	1.4%	Manhattan CBD
Secaucus	NJ TRANSIT	—	10,279	10,834	555	5.4%	New Jersey
Fulton St	NYCT	Nos. 2, 3, 4, 5, and A, C, J, Z	21,195	21,799	533	2.4%	Manhattan CBD
Hoboken	NJ TRANSIT	—	10,000	10,501	501	5.0%	New Jersey
Lexington Ave/59 St	NYCT	Nos. 4, 5, 6, and N, R, W	37,090	37,888	490	1.3%	Manhattan CBD
Lexington Av/53 St and 51 St	NYCT	No. 6, and E, M	16,970	17,452	425	2.4%	Manhattan CBD
42 St-Bryant Park-5 Av	NYCT	No. 7, and B, D, F, M	25,587	26,160	369	1.4%	Manhattan CBD
Broadway-Lafayette St and Bleecker St	NYCT	No. 6, and B, D, F, M	27,319	27,990	368	1.3%	Manhattan CBD
Court Square	NYCT	No. 7, and E, G, M	23,503	24,048	354	1.5%	Queens
59 St-Columbus Circle	NYCT	No. 1, and A, B, C, D	38,814	39,552	351	0.9%	Manhattan CBD
Hoboken Terminal (PATH)	PANYNJ	—	8,005	8,345	340	4.2%	New Jersey
Atlantic Av-Barclays Center	NYCT	Nos. 2, 3, 4, 5, and B, Q, D, N, R	37,024	37,710	338	0.9%	Brooklyn
34 St-Herald Sq	NYCT	B, D, F, M, N, Q, R, W	33,021	33,632	344	1.0%	Manhattan CBD
Port Authority Bus Terminal	PANYNJ	—	25,192	25,517	325	1.3%	Manhattan CBD
14 St (Sixth Av/Seventh Av)	NYCT	Nos. 1, 2, 3, and F, M, L	19,476	19,898	288	1.5%	Manhattan CBD
World Trade Center Station	PANYNJ	—	22,469	22,754	285	1.3%	Manhattan CBD
Flushing-Main St	NYCT	7	15,980	16,262	281	1.8%	Queens
Broadway Junction	NYCT	A, C, J, Z	22,013	22,494	264	1.2%	Queens
Canal St	NYCT	No. 6, and N, Q, R, W, J	11,846	12,151	247	2.0%	Manhattan CBD
34 St-Penn Station	NYCT	A, C, E	13,268	13,519	229	1.7%	Manhattan CBD

STATION NAME	OPERATOR	LINE	NO ACTION Ons/Offs	TOLLING SCENARIO E Ons/Offs	NET ONS/OFFS	NET PERCENTAGE CHANGE	LOCATION
168 St-Washington Heights	NYCT	No. 1, and A, C	12,013	12,317	219	1.8%	Manhattan
Newark Penn Station	NJ TRANSIT	—	20,390	20,571	181	0.9%	New Jersey
Newark Penn Station	PANYNJ	—	10,236	10,396	160	2.0%	New Jersey

Source: WSP, Best Practice Model 2021.
Note: All stations with free connections have aggregated volumes. Peak-hour incremental change was calculated as an average 28 percent peak-hour to peak-period ratio in the PM for NYCT subways, PATH trains, and buses; 43 percent peak-hour to peak-period ratio for Metro-North and NJ TRANSIT; and 41 percent peak-hour to peak-period ratio for LIRR. Net ons/offs include subway-to-bus, subway-to-subway, and bus-to-subway transfers and is not a direct calculation of Tolling Scenario E minus No Action Alternative incremental trips.

Figure 4C-7. Transit Stations Identified for Detailed Station Analysis (2023, Tolling Scenario E – Representative Tolling Scenario)

Source: WSP, Best Practice Model 2021.

Qualitative Analysis of NYC Stations

Some of the stations with over 200 anticipated new passengers due to the Project have large-scale station improvements either recently constructed, being implemented, or in process, which will significantly change circulation patterns and capacity at these stations. Consultation undertaken with NYCT—which took into account these current and/or future station improvements, as well as station size and available access points, existing usage levels, and baseline data availability—concluded that a qualitative evaluation of the stations below is appropriate as the projected incremental trips, in the context of ongoing improvements, would not have the potential to result in adverse effects. For more information, see the methodology for performing qualitative assessments above in Section 4C.2.1.1.

Grand Central Terminal (serving Metro-North) is projected to have a net increase of 619 peak-hour passengers under Tolling Scenario E, which constitutes a 1.4 percent increase in Metro-North ridership at this East Midtown hub (see Table 4C-27). Additionally, the **42nd St–Grand Central** subway station is projected to see a net increase of 761 peak-hour passengers under Tolling Scenario E. About two-thirds of these are the Nos. 4/5/6 line passengers, followed by about 30 percent of passengers using the No. 7 train. The remaining 5 percent are passengers using the 42nd Street Shuttle (S).

Several improvements have recently been completed at the Grand Central Terminal commuter rail and subway stations. Over the years, the North End Access project has provided Metro-North commuter rail passengers at Grand Central Terminal with more direct access to destinations north of the Terminal, and additional access points are planned for future development sites. The anticipated completion of the East Side Access project will provide a new LIRR connection to the East Side with a new concourse below the existing Terminal and the new One Vanderbilt development. The 42 Street Connection Project, completed in 2021, has added capacity to several stairs between the terminal and subway and between the subway and street, along with additional turnstiles and platform area serving the 42nd Street Shuttle (S), and modernized the escalators and elevator. Other than the escalator and elevator work, these changes will improve transfer moves, which are the largest portion of the projected increment for these stations, although they will not increase overall capacity. Similarly, the Lexington Avenue line station that is one stop north of Grand Central Station—the Lexington Av/53 St–51 St Station—is expected to undergo substantial improvements as part of the on-going build-out of the Greater East Midtown Rezoning initiatives. This station, which is projected to incur a net increase of 395 peak-hour passengers under Scenario E, spans three city blocks linking two separate station complexes (i.e., 51st St [No. 6 train] and Lexington Av–53 St [E/M trains]).

Accordingly, the projected incremental trips would be dispersed across a large number of station elements, many of which will undergo substantial improvements. Hence, in consultation with NYCT, quantitative analyses of the Grand Central commuter rail terminal and subway station, as well as the Lexington Av–53 St/51st St Station, were determined to be not warranted. Considering the improvements that would be in place and which were designed to improve existing operations and accommodate future growth, the projected increments from the Project, dispersed across this station, would not be expected to have the potential to result in adverse effects.

The PABT is projected to see a net increase of 301 passengers in the AM peak hour, which is an increase of 1.3 percent. AM peak period ridership of the PABT was 84,000 in 2015 according to the Continuous Bus Study, roughly 26 percent of which (21,840) occurred during the AM peak hour. Because the projected increments would be distributed across a large transit complex, including a portion captured in the Times Square Station analyses, a quantitative analysis of the bus terminal (which is not expected to show material differences between future no action and with action conditions) was determined to not be warranted. The CBD Tolling Alternative is, hence, not expected to result in adverse effects on circulation elements within this facility.

Under Tolling Scenario E, the **Penn Station New York** (LIRR, NJ TRANSIT, Amtrak) Station is projected to experience a net increase of 1,380 passengers (a 2.2 percent increase) and the **34 St-Penn Station** (Eighth Avenue A, C, E lines) a net increase of 213 passengers (a 1.9 percent increase). The **34 St–Herald Square** Station is projected to see an increase of 319 passengers (a 1.9 percent increase). The 34 St-Penn Station (Seventh Avenue 1, 2, 3 lines) is not projected to experience a net increase of over 200 passengers.

- With respect to Penn Station New York and 34-Penn Station, according to the April 2021 Penn Station Master Plan, https://new.mta.info/document/37416 , daily Penn Station ridership was approximately 600,000 in 2019.[34] Roughly 30 percent of that ridership occurred in the AM peak period (180,000), and 26 percent of AM peak ridership (40,680) occurred during the AM peak hour. Considering the expansiveness of Penn Station New York and its adjacent subway stations, as well as the recently completed Moynihan Station, the incremental pedestrian trips would be dispersed across a myriad of different pedestrian paths and a large number of station circulation elements, and would not be perceptible to those already using the station.
- At 34 St – Herald Square Station, turnstile data shows daily ridership of approximately 250,000 in October 2019.[35] Roughly 30 percent of that ridership occurred in the AM peak period (75,000), and 26 percent of AM peak ridership (19,500) occurred during the AM peak hour. The under 400 incremental passengers would traverse a large network of street-level entrances and underground passageways extending from West 32nd to West 35th Streets across Broadway and Sixth Avenue.
- Accordingly, incremental ridership increases from the Project are unlikely to result in perceptible changes to operations at these transit facilities. Hence, in consultation with NYCT, quantitative analyses of the Penn Station New York commuter rail terminal and the adjacent/adjoining 34th Street subway stations were determined to be not required, and the Project is not expected to result in adverse effects on circulation elements within these facilities.

[34] 39 percent LIRR (237,000); 31 percent NJ TRANSIT (187,000); 24 percent subway and others, including local office workers and others patronizing in station retail (142,000) and 6 percent Amtrak (34,000). April 2021 Penn Station Master Plan. https://new.mta.info/document/37416.

[35] MTA Turnstile data. http://web.mta.info/developers/turnstile.html.

Fulton Street Station is projected to see an increase of 560 passengers in the AM peak hour, which is a 2.8 percent increase relative to the station's No Action Alternative ridership. The incremental number of passengers among the A/C, Nos. 2/3, and Nos. 4/5 lines are comparable, with the highest projected volumes on the A/C lines. Access to these lines is made via many station entrances spanning several city blocks east–west and north–south. Additionally, all lines within this station are connected via underground passageways; therefore, the projected increments would be well distributed across many station elements, such that the increase in trips at any individual station element is likely to be imperceptible. Moreover, the Fulton Street Transit Center renovations, completed in 2014, which included additional stair capacity off each platform, opening of new entrances, and reconstruction of upper mezzanine areas that improved ease of transfers within the station, provided additional capacity to accommodate future growth in ridership. Accordingly, in consultation with NYCT, a quantitative analysis was determined to be not required, and the Project is not expected to result in adverse effects at this station.

Quantitative Analysis of Stations

For the remaining stations, a quantitative station analysis was conducted at 18 transit stations: 13 NYCT stations, 2 NJ TRANSIT stations, and 3 PATH stations (operated by PANYNJ).

Quantitative Analysis of Transit Stations – NYCT Stations

An analysis of existing AM and PM peak-hour service levels at station elements was prepared to describe the operating conditions of the 13 stations and identify station elements that are already operating near capacity or at congested levels. These study locations were selected in coordination with NYCT. For each station's selected analysis locations, NYCT was consulted on the appropriate application of friction and surge factors and the analyses were prepared in accordance with the guidance presented in the *CEQR Technical Manual*. As summarized in Table 4C-29 and Table 4C-30, approximately 15 percent of the station elements (86 in the AM peak hour and 81 in the PM peak hour out of 564 station elements) analyzed for the 13 stations currently operate at or above capacity, at level of service (LOS) D or worse. The detailed analysis results described above are presented in Appendix 4C-7, "Transportation: Level of Service Tables – New York City" and Appendix 4C-8, "Transportation: Level of Service Tables – NJ TRANSIT and PATH Stations."

For the No Action Alternative, no additional background growth was applied on top of 2019 ridership levels since the existing condition incorporates a return to pre-COVID-19 pandemic transit ridership. According to an analysis by McKinsey & Company, commissioned by MTA, ridership may reach 80 percent to 92 percent of pre-pandemic levels by end of 2024.[36] As summarized in Table 4C-31 and Table 4C-32, approximately 14 percent to 15 percent of the station elements (86 in the AM peak hour and 81 in the PM peak hour out of 563 station elements) analyzed for the 13 stations would operate at or above capacity, at LOS D or worse.

[36] MTA 2021 Budget and 2021–2024 Financial Plan Adoption Materials. MTA Finance Committee/MTA Board. December 16, 2020. https://new.mta.info/document/25291.

Table 4C-28. Existing Conditions Level of Service for Analyzed Stations Elements (2019 AM Peak Hour)

STATION	COUNT OF VERTICAL CIRCULATION ELEMENTS				COUNT OF FARE CONTROL AREA ELEMENTS			
	LOS A, B, C	LOS D	LOS E	LOS F	LOS A, B, C	LOS D	LOS E	LOS F
14 St-Union Square	27	9	2	6	12	0	0	0
42 St-Times Square/PABT	51	6	11	4	17	0	0	0
42 St-Bryant Park/Fifth Av	29	4	3	1	9	0	0	0
Bleecker St-Broadway/Lafayette St	28	0	0	1	10	0	0	0
Atlantic Av-Barclays Center	16	1	1	0	8	0	0	0
14 St-Sixth/Seventh Av	59	2	1	1	16	0	0	0
Flushing-Main St	10	4	1	3	3	0	0	0
Canal St (N, Q, R, W, J, Z, 6)	30	2	1	0	9	0	0	0
168 St-Washington Heights	31	0	1	0	4	0	0	0
59 St-Columbus Circle	25	2	0	0	7	0	0	0
Broadway Junction	10	4	1	0	1	0	0	0
Court Square	24	0	2	1	8	0	0	0
Lexington Av/59 St	24	5	2	4	10	0	0	0

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

Table 4C-29. Existing Conditions Level of Service for Analyzed Station Elements (2019 PM Peak Hour)

STATION	COUNT OF VERTICAL CIRCULATION ELEMENTS				COUNT OF FARE CONTROL AREA ELEMENTS			
	LOS A, B, C	LOS D	LOS E	LOS F	LOS A, B, C	LOS D	LOS E	LOS F
14 St-Union Square	27	10	3	4	12	0	0	0
42 St-Times Square/PABT	49	10	10	3	17	0	0	0
42 St-Bryant Park/Fifth Av	31	4	0	2	9	0	0	0
Bleecker St-Broadway/Lafayette St	24	4	0	1	10	0	0	0
Atlantic Av-Barclays Center	13	5	0	0	8	0	0	0
14 St-Sixth/Seventh Av	60	3	0	0	16	0	0	0
Flushing-Main St	13	2	2	1	3	0	0	0
Canal St (N, Q, R, W, J, Z, 6)	31	2	0	0	9	0	0	0
168 St-Washington Heights	31	1	0	0	4	0	0	0
59 St-Columbus Circle	26	1	0	0	7	0	0	0
Broadway Junction	13	2	0	0	1	0	0	0
Court Square	26	1	0	0	8	0	0	0
Lexington Av/59 St	25	4	2	4	10	0	0	0

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

Table 4C-30. No Action Alternative Level of Service for Analyzed Station Elements (2023 AM Peak Hour)

STATION	COUNT OF VERTICAL CIRCULATION ELEMENTS				COUNT OF FARE CONTROL AREA ELEMENTS			
	LOS A, B, C	LOS D	LOS E	LOS F	LOS A, B, C	LOS D	LOS E	LOS F
14 St-Union Square	27	9	2	6	12	0	0	0
42 St-Times Square/PABT	51	6	11	4	16	0	0	0
42 St-Bryant Park/Fifth Av	29	4	3	1	9	0	0	0
Bleecker St-Broadway/Lafayette St	28	0	0	1	10	0	0	0
Atlantic Av-Barclays Center	16	1	1	0	8	0	0	0
14 St-Sixth/Seventh Av	59	2	1	1	16	0	0	0
Flushing-Main St	10	4	1	3	3	0	0	0
Canal St (N, Q, R, W, J, Z, 6)	30	2	1	0	9	0	0	0
168 St-Washington Heights	31	0	1	0	4	0	0	0
59 St-Columbus Circle	25	2	0	0	7	0	0	0
Broadway Junction	10	4	1	0	1	0	0	0
Court Square	24	0	2	1	8	0	0	0
Lexington Av/59 St	24	5	2	4	10	0	0	0

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

Table 4C-31. No Action Alternative Level of Service for Analyzed Station Elements (2023 PM Peak Hour)

STATION	COUNT OF VERTICAL CIRCULATION ELEMENTS				COUNT OF FARE CONTROL AREA ELEMENTS			
	LOS A, B, C	LOS D	LOS E	LOS F	LOS A, B, C	LOS D	LOS E	LOS F
14 St-Union Square	27	10	3	4	12	0	0	0
42 St-Times Square/PABT	49	10	10	3	16	0	0	0
42 St-Bryant Park/Fifth Av	31	4	0	2	9	0	0	0
Bleecker St-Broadway/Lafayette St	24	4	0	1	10	0	0	0
Atlantic Av-Barclays Center	13	5	0	0	8	0	0	0
14 St-Sixth/Seventh Av	60	3	0	0	16	0	0	0
Flushing-Main St	13	2	2	1	3	0	0	0
Canal St (N, Q, R, W, J, Z, 6)	31	2	0	0	9	0	0	0
168 St-Washington Heights	31	1	0	0	4	0	0	0
59 St-Columbus Circle	26	1	0	0	7	0	0	0
Broadway Junction	13	2	0	0	1	0	0	0
Court Square	26	1	0	0	8	0	0	0
Lexington Av/59 St	25	4	2	4	10	0	0	0

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

As described above, the implementation of the Project would result in measurable increases in subway trips at the 13 analyzed subway stations and the analyses presented in this subchapter depict conditions under the representative tolling scenario with the highest level of incremental ridership increases for subway operations. These increments were used in the station trip assignments described above and overlaid onto the station analysis elements for the quantitative analyses. As summarized in **Table 4C-33 and Table 4C-34**, approximately 15 percent to 16 percent of the station elements (88 in the AM peak hour and 85 in the PM peak hour out of 563 station elements) analyzed for the 13 stations would operate at or above capacity, at LOS D or worse, for Tolling Scenario E.

Table 4C-32. CBD Tolling Alternative Level of Service for Analyzed Station Elements (2023 AM Peak Hour)

STATION	COUNT OF VERTICAL CIRCULATION ELEMENTS				COUNT OF FARE CONTROL AREA ELEMENTS			
	LOS A, B, C	LOS D	LOS E	LOS F	LOS A, B, C	LOS D	LOS E	LOS F
14 St-Union Square	26	9	3	6	12	0	0	0
42 St-Times Square/PABT	50	6	11	5	16	0	0	0
42 St-Bryant Park/Fifth Av	29	4	3	1	9	0	0	0
Bleecker St-Broadway/Lafayette St	28	0	1	0	10	0	0	0
Atlantic Av-Barclays Center	16	1	0	1	8	0	0	0
14 St-Sixth/Seventh Av	59	1	2	1	16	0	0	0
Flushing-Main St	10	4	1	3	3	0	0	0
Canal St (N, Q, R, W, J, Z, and No. 6)	30	2	1	0	9	0	0	0
168 St-Washington Heights	31	0	1	0	4	0	0	0
59 St-Columbus Circle	25	2	0	0	7	0	0	0
Broadway Junction	10	4	1	0	1	0	0	0
Court Square	24	0	2	1	8	0	0	0
Lexington Av/59 St	24	5	2	4	10	0	0	0

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

Table 4C-33. CBD Tolling Alternative Level of Service for Analyzed Station Elements (2023 PM Peak Hour)

STATION	COUNT OF VERTICAL CIRCULATION ELEMENTS				COUNT OF FARE CONTROL AREA ELEMENTS			
	LOS A, B, C	LOS D	LOS E	LOS F	LOS A, B, C	LOS D	LOS E	LOS F
14 St-Union Square	27	9	4	4	12	0	0	0
42 St-Times Square/PABT	48	10	10	4	16	0	0	0
42 St-Bryant Park/Fifth Av	31	4	0	2	9	0	0	0
Bleecker St-Broadway/Lafayette St	24	4	0	1	10	0	0	0
Atlantic Av-Barclays Center	13	5	0	0	8	0	0	0
14 St-Sixth/Seventh Av	60	2	1	0	16	0	0	0
Flushing-Main St	12	3	2	1	3	0	0	0
Canal St (N, Q, R, W, J, Z, and No. 6)	31	2	0	0	9	0	0	0
168 St-Washington Heights	31	1	0	0	4	0	0	0
59 St-Columbus Circle	26	1	0	0	7	0	0	0
Broadway Junction	13	2	0	0	1	0	0	0
Court Square	25	1	1	0	8	0	0	0
Lexington Av/59 St	24	4	3	4	10	0	0	0

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

Based on criteria prescribed in the *CEQR Technical Manual*, without Project improvements, potential adverse effects were predicted at 4 VCEs and no FCAs across the 13 analyzed stations for the representative tolling scenario (**Table 4C-35**). Comparing projected ridership increases across various tolling scenarios, it is anticipated that some tolling scenarios may have relatively less potential for potential adverse effects (further described below). At stations where adverse effects are anticipated monitoring will be undertaken and the following mitigation measures will be pursued should they be needed:

- **Times Square Station (PM only)**
  - *VCE:* Interborough Rapid Transit (IRT) Mezzanine Level (ML) Stair 6/8 (Stair ML6/ML8) – stairway connecting IRT mezzanine to uptown Nos. 1, 2, 3 subway platform. The adverse effects identified for the Stair ML6/ML8 will be avoided or relieved by removing the center handrail and standardizing the riser, so that the stair meets code without the handrail. (NYCT has confirmed code compliance.) Implementing this mitigation measure will improve the PM peak-hour conditions from LOS F (with a v/c ratio of 1.70) to LOS E (with a v/c ratio of 1.64) and avoid the predicted potential adverse effect. Upon monitoring and evaluation of ridership at this station, TBTA will coordinate with MTA to construct this improvement if the projected ridership materializes.

Table 4C-34. NYCT Station Elements Where Adverse Effects and Accompanying Project Improvements Have Been Identified (CBD Tolling Alternative, 2023 AM/PM Peak Hour)

STATION	ELEMENT	ELEMENT DESCRIPTION	PEAK HOUR OF CONCERN	NO ACTION ALTERNATIVE			CBD TOLLING ALTERNATIVE			IDENTIFIED IMPROVEMENT
				Peak-Hour Volume	V/C Ratio	Level of Service	Peak-Hour Volume	V/C Ratio	Level of Service	
42 St-Times Sq/PABT	IRT ML6/ML8	Stairway connecting IRT mezzanine to uptown Nos. 1, 2, and 3 subway platform	PM	4,680	1.65	E	3,802	1.70	F	Remove center hand rail and standardize the riser.
Flushing – Main St	E456	Street escalator at north side of Roosevelt Avenue between Main Street and Union Street	AM	2,984	1.18	D	3,040	1.21	D	Increase escalator speed to 120 feet per minute.
Union Sq	E219	Escalator connecting the Canarsie line platform to the IRT mezzanine	AM	2,496	1.26	D	2,519	1.27	D	Increase escalator speed to 120 feet per minute.
Court Sq	Flushing P2/P4	Stair between paid zone and Manhattan-bound No. 7 train	AM	3,825	1.84	F	3,955	1.90	F	Construct new stair from the northern end of the No. 7 platform to the street.

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

- Flushing-Main Street Station (AM only)
  - VCE: Escalator 456 (E456) – located on the east side of the station providing access from the street to the mezzanine. The E456 escalator, which was replaced and operates at a speed of 100 feet per minute (fpm), can be safely operated at 120 fpm. (NYCT has confirmed code compliance). Without the improvement, this escalator would operate at LOS D (with a v/c ratio of 1.21). Implementing this operational change will improve the forecast AM peak-hour condition) to LOS D (with a v/c ratio of 1.08) and avoid the predicted potential adverse effect. Upon monitoring and evaluation of ridership at this station, TBTA will coordinate with MTA to implement this improvement if the projected ridership materializes.
- 14 St - Union Square Station (AM only)
  - VCE: Escalator 219 (E219) – connecting the Canarsie line platform to the IRT mezzanine. The E219 escalator, which was installed in 2020 and operates at a speed of 100 fpm, can be safely operated at 120 fpm. (NYCT has confirmed code compliance). Without the improvement, this escalator would operate at LOS D (with a v/c ratio of 1.27). With the implementation of this operational change, the forecast AM peak-hour condition will be improved to LOS D (with a ratio of 1.15) and avoid the predicted potential adverse effect. Upon monitoring and evaluation of ridership at this station, TBTA will coordinate with MTA to implement this improvement if the projected ridership materializes.
- Court Square Station (AM only)
  - VCE: Flushing Platform Stair 2/4 (Stair P2/P4) Stair – accessing Manhattan-bound No. 7 train. The adverse effects identified for this stairway will be mitigated by building a new stair from the northern end of the No. 7 platform to the street, along with a new fare control area. Doing so will distribute pedestrian flow away from Stair P2/P4. Implementation of this mitigation measure would improve the AM peak-hour conditions from LOS F, with a v/c ratio of 1.90, to LOS E, with a v/c ratio of 1.56 and avoid the predicted potential adverse effect. The improvement (the new stair and fare control area) is listed in the Special Long Island City Mixed Use District, Court Square Subdistrict, administered by the New York City Department of City Planning (NYCDCP). The Subdistrict language assigns transit improvement projects to projected developments on three blocks—this improvement is tied to a site on the southernmost block, which is on the east side of 23rd Street between 45th Road and 45th Avenue, Queens, New York. NYCT maintains ongoing coordination with NYCDCP about potential qualifying developments within the Subdistrict, and MTA approval for the design of the subway improvement and certification by the Chairperson of the City Planning Commission are both required. Thus, it is possible that this mitigation will be built by an outside developer in coordination with NYCT before the impact occurs. Upon monitoring of ridership at this station, if the projected ridership is anticipated to materialize and this station improvement has not been constructed via outside developers, or if construction by an outside developer is not likely in the foreseeable future from when the impact is triggered, TBTA will coordinate with NYCT to construct this new stair. The monitoring plan will allow for sufficient time to implement the mitigation to ensure that the adverse effect does not occur.

Implementation of the potential stairway and escalator improvements at 42nd Street-Times Square/PABT, Main Street-Flushing, Court Square, and 14th Street-Union Square Stations have been reviewed by NYCT for feasibility and will be further coordinated and finalized through NYCT, in compliance with requirements under the Americans with Disabilities Act.

In contrasting the projected increases in passenger volumes among the various tolling scenarios, it can be expected that Tolling Scenarios D and F would yield the same or comparable adverse effects that could be addressed with the same Project improvements identified for the representative tolling scenario. While these adverse effects and need for Project improvements may also materialize for Tolling Scenarios A, B, C, and G, the severity of the adverse effects and extent of Project improvements needed is likely to be relatively less than the other three tolling scenarios (D, E, and F) and varies by station element as a function of projected net passenger increase at the station. Nevertheless, to ensure the Project does not create an adverse effect at any of the four NYCT station elements described above, monitoring at all four NYCT station elements will be undertaken regardless of the tolling scenario selected. Monitoring of actual conditions before and after Project implementation will determine if the potential Project mitigation measures identified are warranted for implementation.

The operating agencies will monitor changes in ***[passenger volumes at the specific station elements in]*** the first year after implementation of the Project. The changes in ***[passenger volumes]*** will be used in accordance with the thresholds defined by the *CEQR Technical Manual* to determine whether forecast adverse effects at specific station elements would materialize and whether improvement strategies—which, if implemented, would achieve an adequate level of improvement to avoid the predicted adverse effects—should be pursued.

[Design and resource allocation will begin immediately after the passenger volume threshold is exceeded (or if already exceeded, as soon as practicable), and the mitigation measures will be implemented prior to overall ridership at the station exceeding 90 percent of 2019 levels.] Because some of these strategies are likely to require additional planning, design, and construction, it is possible that short-term, adverse effects may occur while these improvements are being designed and constructed. The operating agencies will also advance planning and design efforts subsequent to approval of the Project to expedite the implementation of improvement strategies if they are deemed warranted by the above monitoring efforts.

Detailed Analysis of Transit Stations – NJ TRANSIT Stations

Analyses of stations for NJ TRANSIT were performed using CEQR guidelines for consistency and because NJ TRANSIT does not have an alternative guideline. Two NJ TRANSIT stations, Secaucus Junction and Hoboken Terminal, would meet the CEQR criteria for detailed analysis with 200 or more Project-generated trips in a peak hour with Tolling Scenario E, the representative tolling scenario for transit analyses. In addition, Newark Penn Station would experience an increase of more than 200 peak-hour trips with Tolling Scenario C.

At Hoboken Terminal and Newark, the connected PATH stations would also experience increases of more than 200 peak-hour trips, and in those cases, most of the increase consists of transfers between NJ TRANSIT rail and PATH trains.

NJ TRANSIT trains at Hoboken Terminal are distributed to 17 tracks which are accessed via nine at-grade platforms. The platforms are accessed directly from an at-grade concourse at the south end of the tracks and at-grade platforms without any requirement for vertical circulation. Therefore, NJ TRANSIT areas of the station do not contain many capacity constrained pedestrian elements (such as stairs or escalators). As Project-generated passengers would be widely dispersed in the terminal and there are no VCEs in the NJ TRANSIT area, no further analysis was performed for the NJ TRANSIT areas of Hoboken Terminal. (Analysis of PATH station elements at Hoboken Terminal is discussed below.)

For the Secaucus Junction and Newark Penn Station, Project-generated incremental pedestrian volumes were assigned to VCEs along likely paths of travel. Detailed analysis was conducted for elements that are projected to see an increase of 100 or more people in the AM or PM peak hour, because it was deemed unlikely that elements with smaller incremental increases would experience an adverse effect from the Project. This threshold was borne out by the analysis because the elements that exceeded the 100-person threshold also did not experience significant adverse effects.

BPM model outputs indicate that most Project-generated trips at Secaucus Junction would be transferring from eastbound Main Line trains to eastbound Northeast Corridor trains in the morning and the reverse direction in the evening, with a small number also transferring between buses and Northeast Corridor trains. While passengers making these connections are distributed to multiple stairs and escalators, there would be a concentration of activity on the three escalators to the platform serving Northeast Corridor Tracks A and B just north of the fare control area at the mezzanine level. Analysis was also conducted for the next set of stairs and escalators to Tracks 2, A, B, and 3 north of the fare control area.

At Newark Penn Station, most Project-generated trips would be transferring from eastbound NJ TRANSIT trains to eastbound PATH trains in the morning and the reverse direction in the evening. In the morning, these transfers would be primarily cross-platform from Tracks 1 and 2 to the eastbound PATH platform without using any vertical circulation. The small number who would transfer from Track A to PATH would use vertical circulation but would result in very small incremental volumes on those elements. During the evening, most Project-generated trips would transfer from the arriving PATH platform H down a ramp to the platform serving Tracks 3 and 4. A smaller number of passengers would transfer down another ramp to the platform serving Track 5. An analysis was conducted of the ramp to Platforms 3 and 4 in the PM peak period only.

For the No Action Alternative, no growth factor was applied because the baseline conditions incorporate a return to pre-COVID-19 pandemic transit ridership. Therefore, levels of service are the same in the existing condition and No Action Alternative.

The LOS on the ramp analyzed at Newark Penn Station (Table 4C-36), would continue to operate at LOS A with the Project. Of the eight elements analyzed at Secaucus Junction, one escalator and one stair would decline from LOS A to LOS C with the proposed action. However, based on criteria prescribed in the *CEQR Technical Manual*, no significant adverse effects were predicted at the NJ TRANSIT stations.

Table 4C-35. Level of Service on NJ TRANSIT Station Elements (Peak Hour)

STATION/ELEMENT	EXISTING (2019)		NO ACTION ALTERNATIVE (2023)		CBD TOLLING ALTERNATIVE (2023)	
	AM	PM	AM	PM	AM	PM
Newark, Ramp to Tracks 3 and 4	N/A	A	N/A	A	N/A	A
Secaucus, Escalator 1a to Platform A/B	A	A	A	A	B	A
Secaucus, Escalator 1b to Platform A/B	A	A	A	A	C	A
Secaucus, Escalator 1c to Platform A/B	B	A	B	A	B	A
Secaucus, Stair 2a to Platform 3	A	N/A	A	N/A	A	N/A
Secaucus, Escalator 2b to Platform 3	A	N/A	A	N/A	A	N/A
Secaucus, Stair 3 to Platform A/B	A	A	A	A	C	C
Secaucus, Stair 4a to Platform 2	N/A	A	N/A	A	N/A	A
Secaucus, Escalator 4b to Platform 2	N/A	A	N/A	A	N/A	A

Source: Analysis prepared by AKRF, FHI Studio, and WSP.
Note: N/A = Not applicable

Detailed Analysis of Transit Station – PATH Stations

Analyses of stations for PATH were performed using CEQR guidelines for consistency and because PANYNJ does not have an alternative guideline. Three PATH stations—World Trade Center, Newark Penn Station, and Hoboken Terminal—would meet the CEQR criteria for detailed analysis with 200 or more Project-generated trips in a peak hour with Tolling Scenario E. At Hoboken and Newark, most of the Project-generated increase consists of transfers between PATH and NJ TRANSIT trains.

The PATH World Trade Center Station consists of five tracks accessed from four platforms. Each of the platforms is accessed by multiple stairs and escalators in relatively close proximity. Distribution of Project-generated passengers to the various elements results in low incremental volumes on each element. Due to the number of platforms and circulation elements, no individual circulation element would receive more than 100 new trips in a peak hour. Based on distribution and low incremental volumes added to individual elements, more detailed analysis was not performed for circulation elements in the station.

At Newark Penn Station, originating PATH trains depart eastbound on a track that is at the same level as the NJ TRANSIT rail tracks. Departing trains are accessible from platforms on both sides of this track, which are directly accessible from the platforms serving NJ TRANSIT Tracks 1 and 2. PATH trains arrive and terminate westbound at a track on the upper level. Access to both PATH platforms is provided via stairs, escalators, and two ramps that are in the NJ TRANSIT controlled areas of the station and were addressed by the analysis for those areas, described above.

The PATH Hoboken Station is connected to the Hoboken Terminal NJ TRANSIT trains by two stairs located within the Terminal building and two smaller stairs located just outside the north wall of the Terminal. Most passengers transferring between PATH and NJ TRANSIT use the two inside stairs due to their larger size and visibility from within the terminal or the PATH station. The PATH station also has two stairs on the north side of the station providing access to Hudson Place and the Hoboken community.

Project-generated trips were assigned to the two key stairs providing connection to Hoboken Terminal, street stairs serving the community, and additional stairs that connect a mezzanine level to each of the

three platforms. Although only Stair 01/02, connecting the PATH station to Hoboken Terminal, would experience more than 100 Project-generated trips during either peak hour, a detailed analysis was performed both for that Stair 01/02 and Stair 05, which also connects to the terminal. **Table 4C-37** indicates existing, No Action Alternative, and CBD Tolling Alternative LOS on the two stairs analyzed at the PATH Hoboken Station.

Table 4C-36. Level of Service on PATH Hoboken Station Elements (AM and PM Peak Hours)

STATION/ELEMENT	EXISTING (2019)		NO ACTION ALTERNATIVE (2023)		CBD TOLLING ALTERNATIVE (2023)	
	AM	PM	AM	PM	AM	PM
Hoboken Stair 01/02	LOS D	LOS D	LOS D	LOS D	LOS E	LOS D
Hoboken Stair 05	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

The implementation of the Project would result in measurable increases in volumes on the various stairs at the PATH Hoboken Station with the representative tolling scenarios. Based on criteria prescribed in the *CEQR Technical Manual*, an adverse effect was predicted during the AM peak hour at Stair 01/02 for Tolling Scenario E, the tolling scenario with the highest projected ridership.

In contrasting the projected increases in passenger volumes among the various tolling scenarios, there could be considerable differences in the projected passenger increases, which could lead to potential adverse effects (**Table 4C-38**). While Tolling Scenarios E and F (the tolling scenarios with the highest tolls) would yield the passenger increases sufficient to result in adverse effects, Tolling Scenarios A, B, C, D, and G are not predicted to result in adverse effects in this location.

Table 4C-37. Projected Net Passenger Increase at Hoboken Stair 01/02 (All Scenarios, AM Peak Hour)

	TOLLING SCENARIO A	TOLLING SCENARIO B	TOLLING SCENARIO C	TOLLING SCENARIO D	TOLLING SCENARIO E	TOLLING SCENARIO F	TOLLING SCENARIO G
Projected Passenger Increase	45	72	122	164	240	205	139
Determin-ation of Adverse Effect	None	None	None	None	Likely	Likely	None

Source: Analysis prepared by AKRF, FHI Studio, and WSP.

If Tolling Scenario E or F is selected by the TBTA Board, the Project Sponsors will monitor ridership at this station ***[two months]*** after Project implementation to evaluate whether projected ridership has materialized due to the Project. The specific plan for monitoring is being developed in coordination with PANYNJ (PATH) and NJ TRANSIT. As outlined in the plan, if a comparison of Stair 01/02 passenger volumes one month prior and two months after implementation shows an incremental change that is greater than or equal to 205 passengers, the Project Sponsors will continue coordination with PANYNJ (PATH) and NJ TRANSIT to implement improved wayfinding and supplemental temporary personnel to direct passengers if needed. These mitigation measures are expected to improve circulation and more evenly

distribute passengers among the station's stairs, including PATH Stairs 03 and 05. Through consultation and in coordination with NJ TRANSIT and PANYNJ (PATH), if it is determined that the predicted adverse effects on Stair 01/02 would materialize, the committed improvements will be implemented to alleviate the adverse effect.

4C.5 CONCLUSION

Ridership increases resulting from the Project would affect a limited number of subway lines and subway stations within the regional transit system (and no bus or commuter rail lines or stations). Even in the tolling scenarios with the highest incremental ridership increases, the increases in ridership on the transit lines (line-haul capacity) would not be high enough to be considered adverse effects.

The station screening analysis resulted in some forecast increases of over 200 passengers in MTA subway stations and commuter rail hubs connecting to the Manhattan CBD, but most subway stations and all other commuter rail stations are projected to see relatively small increases. Based on criteria prescribed in the *CEQR Technical Manual*, without Project improvements, potential adverse effects were predicted at 4 VCEs and no FCAs across the 13 analyzed NYCT stations; and at 1 VCE and no FCAs across the 4 analyzed NJ TRANSIT and PATH stations for Tolling Scenario E. These are further described in Table 4C-39, along with accompanying project improvements *[and Table 4C-40 summarizes how mitigation measures will be implemented by the Project Sponsors]*.

Improvements that could alleviate the predicted potential adverse effects include increasing escalator speeds, adding additional wayfinding to distribute passengers, and stair improvements, depending upon location. With the implementation of these improvements, the adverse effects would be ameliorated. In the case of the predicted adverse effect in New Jersey under certain tolling scenarios, planned improvements have been coordinated with NJ TRANSIT and PANYNJ (PATH); coordination will continue for a detailed monitoring program and implementation of improvements, should they be warranted.

Contrasting the projected increases in passenger volumes among the various tolling scenarios, Tolling Scenarios D and F are expected to yield the same or comparable adverse effects that could be addressed with the same Project improvements that are identified for Tolling Scenario E, the representative tolling scenario with the highest incremental ridership increases. While these adverse effects and need for Project improvements may also materialize for Tolling Scenarios A, B, C, and G, the severity of the adverse effects and extent of Project improvements needed may not be needed or may be less than for Tolling Scenario E, depending upon the location.

In consideration of reduced ridership on the subway due to the COVID-19 pandemic, TBTA and the other sponsoring agencies have committed to monitoring before and after Project implementation at the select locations at which adverse effects are predicted under the analyzed tolling scenario. If ridership at those station elements increases (in comparison to pre-implementation ridership) at or above the level anticipated, the Project Sponsors will implement the mitigation measures described above. Because strategies at two NYCT VCEs may require additional planning, design, and construction, the operating agencies will advance planning and design efforts subsequent to approval of the Project to expedite the implementation of improvement strategies if they are warranted by the above monitoring efforts. Short-term, adverse effects may temporarily occur during this construction or implementation process.

Table 4C-38. Summary of Effects of the CBD Tolling Alternative on Transit

TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO A	B	C	D	E	F	G	POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
Transit Systems	▪ The Project would generate a dedicated revenue source for investment in the transit system. ▪ Transit ridership would increase by 1 to 2 percent systemwide for travel to and from the Manhattan CBD, because some people would shift to transit rather than driving. Increases in transit ridership would not result in adverse effects on line-haul capacity on any transit routes.	New York City Transit	% Increase or decrease in total daily transit ridership systemwide	1.5%–2.1%							No	**No mitigation needed.** No adverse effects
		PATH		0.8%–2.0%								
		Long Island Rail Road		0.6%–2.0%								
		Metro-North Railroad		0.6%–1.9%								
		NJ TRANSIT Commuter Rail		0.3%–2.3%								
		MTA/NYCT Buses		1.3%–1.6%								
		NJ TRANSIT Bus		0.5%–1.1%								
		Other buses (suburban and private operators)		0.0%–0.9%								
		Ferries (Staten Island Ferry, NYC Ferry, NY Waterway, Seastreak)		2.5%–3.5%								
		Roosevelt Island Tram		1.7%–4.1%								
Bus System Effects	Decreases in traffic volumes within the Manhattan CBD and near the 60th Street boundary of the Manhattan CBD would reduce the roadway congestion that adversely affects bus operations, facilitating more reliable, faster bus trips.	Manhattan local buses	% Increase or decrease at maximum passenger load point	Increases of 0.5%–1.2%							No	**No mitigation needed.** No adverse effects
		Bronx express buses		-1.6% to 2.2%								
		Queens local and express buses (via Ed Koch Queensboro Bridge)		2.0%–2.8%								
		Queens express buses (via Queens-Midtown Tunnel)		-1.3% to 4.1%								
		Brooklyn local and express buses		1.3%–2.6%								
		Staten Island express routes (via Brooklyn)		3.7%–4.5%								
		Staten Island express routes (via NJ)		1.0%–2.8%								
		NJ/West of Hudson buses (via Holland Tunnel)		- 1.4% to 1.4%								
		NJ/West of Hudson buses (via Lincoln Tunnel)		0.4%–1.5%								

TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
				A	B	C	D	E	F	G		
Transit Elements	Increased ridership would affect passenger flows with the potential for adverse effects at certain vertical circulation elements (i.e., stairs and escalators) in five transit stations: ▪ Hoboken Terminal, Hoboken, NJ PATH station ▪ Times Sq-42 St/42 St-Port Authority Bus Terminal subway station in the Manhattan CBD (N, Q, R, W, and S; Nos. 1, 2, 3, and 7; and A, C, E lines) ▪ Flushing-Main St subway station, Queens (No. 7 line) ▪ 14th Street-Union Square subway station in the Manhattan CBD (Nos. 4, 5, and 6; and L, N, Q, R, W lines) ▪ Court Square subway station, Queens (No. 7 and E, G, M lines)	Hoboken Terminal–PATH station (NJ) Stair 01/02	Net passenger increases or decreases at stair in the peak hour	45	72	122	164	240	205	139	Yes	**Mitigation needed for Tolling Scenarios E and F.** TBTA will coordinate with NJ TRANSIT and PANYNJ to monitor pedestrian volumes on Stair 01/02 one month prior to commencing tolling operations to establish a baseline, and two months after Project operations begin. If a comparison of Stair 01/02 passenger volumes before and after implementation shows an incremental change that is greater than or equal to 205, then TBTA will coordinate with NJ TRANSIT and PANYNJ to implement improved signage and wayfinding to divert some people from Stair 01/02, and supplemental personnel if needed.
		42 St-Times Square–subway station (Manhattan) Stair ML6/ML8 connecting mezzanine to uptown 1/2/3 lines subway platform	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	63%	59%	68%	82%	100%	82%	56%	Yes	**Mitigation needed.** TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to remove the center handrail and standardize the riser, so that the stair meets code without the hand rail. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.
		Flushing-Main St subway station (Queens)–Escalator E456 connecting street to mezzanine level	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	116%	91%	108%	116%	100%	133%	72%	Yes	**Mitigation needed**. TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the speed from 100 feet per minute (fpm) to 120 fpm.
		Union Sq subway station (Manhattan)–Escalator E219 connecting the L subway line platform to the Nos. 4/5/6 line mezzanine	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	63%	82%	87%	102%	100%	95%	61%	Yes	**Mitigation needed**. TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the escalator speed from 100 fpm to 120 fpm.
		Court Sq subway station (Queens)–Stair P2/P4 to Manhattan-bound No. 7 line	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	98%	90%	102%	104%	100%	117%	97%	Yes	**Mitigation needed.** TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to construct a new stair from the northern end of the No. 7 platform to the street. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.

Table 4C-40. *[Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Transit]*

RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
Hoboken Terminal–PATH station (NJ) Stair 01/02	TBTA will coordinate with NJ TRANSIT and PANYNJ to monitor pedestrian volumes on Stair 01/02 one month prior to commencing tolling operations to establish a baseline, and two months after Project operations begin. If a comparison of Stair 01/02 passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 205, then TBTA will coordinate with NJ TRANSIT and PANYNJ to implement improved signage and wayfinding to divert some people from Stair 01/02, and supplemental personnel if needed.	For stair passenger volumes, baseline data will be collected one month prior to commencing tolling operations to establish a baseline, and two months after Project operations begin. Station ridership data is collected and evaluated in an ongoing manner by NJ TRANSIT and PANYNJ.	For signage, if a comparison of Stair 01/02 peak-hour passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 205. For supplemental personnel, if the threshold for signage has been reached but signage has not yet been installed, and overall ridership at Hoboken Terminal is 90 percent of 2019 levels 30 days prior to commencing tolling operations.	The monitoring plan will be agreed to by TBTA, PANYNJ, and NJ TRANSIT prior to a decision document being issued and MOU will be drafted thereafter. The MOU will be executed within 120 days after toll rates are set. Signage design will commence after the MOU is executed. Signage fabrication and installation will begin immediately after observing passenger volumes in excess of the threshold for next steps. Supplemental personnel, if needed, will be stationed within 45 days after observing passenger volumes in excess of the threshold for next steps. Supplemental personnel will be used until signage is fabricated and installed.	TBTA will lead and coordinate with NJ TRANSIT and PANYNJ.
42 St-Times Square subway station (Manhattan) Stair ML6/ML8 connecting mezzanine to uptown 1/2/3 lines subway platform	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to remove the center handrail and standardize the riser, so that the stair meets code without the hand rail. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station. For stair passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation. Station ridership data is collected and evaluated in an ongoing manner by MTA NYCT based on turnstile entry and exit data throughout the system.	If a comparison of Stair ML6/ML8 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 92 passengers in the weekday peak hour, and overall ridership at 42 St-Times Square subway station exceeds 90 percent of 2019 levels. The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the *CEQR Technical Manual* and will be coordinated with NYCT.	Design and resource allocation will begin immediately after the passenger volume threshold is exceeded, and the hand rail will be removed prior to overall ridership at the station exceeding 90 percent of 2019 levels.	TBTA will lead in partnership MTA NYCT.
Flushing-Main St subway station (Queens)–Escalator E456 connecting street to mezzanine level	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the speed from 100 feet per minute (fpm) to 120 fpm.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station. For escalator passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation.	If a comparison of Escalator E456 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 26 passengers in the weekday peak hour, and overall ridership at Flushing-Main St subway station exceeds 90 percent of 2019 levels. The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the *CEQR Technical Manual* and will be coordinated with NYCT.	Prior to overall ridership at the station exceeding 90 percent of 2019 levels.	TBTA will lead in partnership MTA NYCT.
Union Sq subway station (Manhattan)–Escalator E219 connecting the L subway line platform to the Nos. 4/5/6 line mezzanine	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the escalator speed from 100 fpm to 120 fpm.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station. For escalator passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation. Station ridership data is collected and evaluated in an ongoing manner by MTA NYCT based on turnstile entry and exit data throughout the system.	If a comparison of Escalator E219 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 21 passengers in the weekday peak hour, and overall ridership at Union Sq subway station exceeds 90 percent of 2019 levels. The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the *CEQR Technical Manual* and will be coordinated with NYCT.	Prior to overall ridership at the station exceeding 90 percent of 2019 levels.	TBTA will lead in partnership MTA NYCT.

RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
Court Sq subway station (Queens)–Stair P2/P4 to Manhattan-bound No. 7 line	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to construct a new stair from the northern end of the No. 7 platform to the street. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station. For stair passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation. Station ridership data is collected and evaluated in an ongoing manner by MTA NYCT based on turnstile entry and exit data throughout the system.	If a comparison of Stair P2/P4 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 101 passengers in the weekday peak hour, and overall ridership at Court Sq subway station exceeds 90 percent of 2019 levels, and if construction by an outside developer is not likely in the foreseeable future. The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the *CEQR Technical Manual* and will be coordinated with NYCT.	Design and resource allocation will begin immediately after the passenger volume threshold is exceeded and will be implemented prior to overall ridership at the station exceeding 90 percent of 2019 levels (if construction by an outside developer is not likely in the foreseeable future).	TBTA will lead in partnership MTA NYCT.

4D. Parking

4D.1 INTRODUCTION

This subchapter describes the potential effects of implementing the CBD Tolling Alternative on parking, including curbside parking (on-street parking) and parking lots and garages (off-street parking) in the regional study area for the Project. The analysis to determine potential effects includes assessments of commuter parking demand on on-street parking and off-street parking, where present; at commuter and intercity rail stations providing service along routes terminating at or near the Manhattan CBD; and at bus facilities, light-rail and subway facilities, ferry facilities, and a tramway facility in the 28-county regional study area. Separately, in New York City outside the Manhattan CBD and in the Manhattan CBD, general parking utilization and availability as well as the potential demand associated with the Project are described. This subchapter considers the Project's potential increase in demand to determine whether the Project could lead to shortfalls in parking supply.[1]

4D.2 METHODOLOGY

The analysis of the potential effects of the Project on parking conditions considered locations where transportation modeling predicts an increase in vehicle trips that would result from the Project (see **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"**).

Consistent with the other analyses in this EA, the parking analysis was conducted using data collected prior to the COVID-19 pandemic. The analysis employs the methodologies outlined in the City of New York's *CEQR Technical Manual*.[2]

The *CEQR Technical Manual* recommends a tiered approach to evaluating a project's effects on parking demand and supply based on the vehicular trips generated by a project in total, and then at individual intersections. The first step in the tiered analysis is to determine whether a project could result in 50 or more additional vehicle trips during the peak hour in total. If surpassed, the second step in the tiered analysis is to determine whether a project could result in 50 or more additional vehicle trips during the

[1] In addition, post-implementation, the Project's effects on parking supply and demand in New York City in and around the Manhattan CBD is required to be evaluated by New York City, and a report must be completed 18 months after the Project commences.

[2] The MTA Reform and Traffic Mobility Act exempts the Project from the requirements of the New York State Environmental Quality Review Act, New York CEQR, the New York City Uniform Land Use Review Procedure, and any other local law of the City of New York of like or similar effect. NYCDOT and other New York City (NYC) agencies use the parking assessment methodology in environmental review documents to assess the potential effects of public and private projects on the supply of and demand for parking in NYC. The parking methodology is also used at times in geographies outside NYC in environmental review documents, such as when the lead agency is based in NYC. The City of New York first published the *CEQR Technical Manual* in 1991 and has released several versions since then to update methodologies based on new information and practical experience. The *CEQR Technical Manual* can be found at https://www1.nyc.gov/site/oec/environmental-quality-review/technical-manual.page.

peak hour at any individual intersection.[3] According to the *CEQR Technical Manual* methodology, that level of new vehicle trips may be large enough to result in a corresponding increase in demand for parking spaces at facilities within a quarter-mile[4] of a project, and detailed analysis of the projected increase in demand for parking relative to existing parking capacity and utilization at individual parking facilities is appropriate at such locations.

The analysis of the Project's potential effects on parking began with a review of the New York Metropolitan Transportation Council (NYMTC) Best Practice Manual (BPM) results for the Project to identify commuter rail stations and park-and-ride facilities where there would be 50 or more new vehicle trips in the peak hours resulting from the Project and, if warranted, additional analysis would be conducted.

Next, should the aforementioned tiered evaluation identify that a detailed parking analysis is warranted, the *CEQR Technical Manual* presents the methodology for determining adverse parking effects. These effects could be considered adverse depending on the location, utilization, and available supply of existing parking capacity according to surveys, and projected increase in parking demand from a project. In some circumstances, projects could adversely affect parking conditions when the demand for parking generated by a project cannot be accommodated by available parking supply, and in other circumstances, this effect would not be categorized as adverse but would be disclosed as a parking shortfall. The *CEQR Technical Manual* identifies certain neighborhoods of New York City as areas where a parking shortfall would not constitute an adverse effect because of the many other alternative modes of transportation there (i.e., where there are subway stations within a quarter-mile[5]) that do not limit trip-making to solely driving and parking. These neighborhoods are defined as "Parking Zones 1 and 2" in the *CEQR Technical Manual*. In these zones, when a project creates or exacerbates demand for parking exceeding parking supply, this is considered a shortfall but not an adverse effect.[6] Parking Zones 1 and 2 encompass all of Manhattan (including Roosevelt Island) and all or parts of the neighborhoods of the South Bronx in the Bronx, Flushing, Jamaica, Long Island City/Astoria in Queens; and Downtown Brooklyn and Greenpoint/Williamsburg in Brooklyn (Figure 4D-1).

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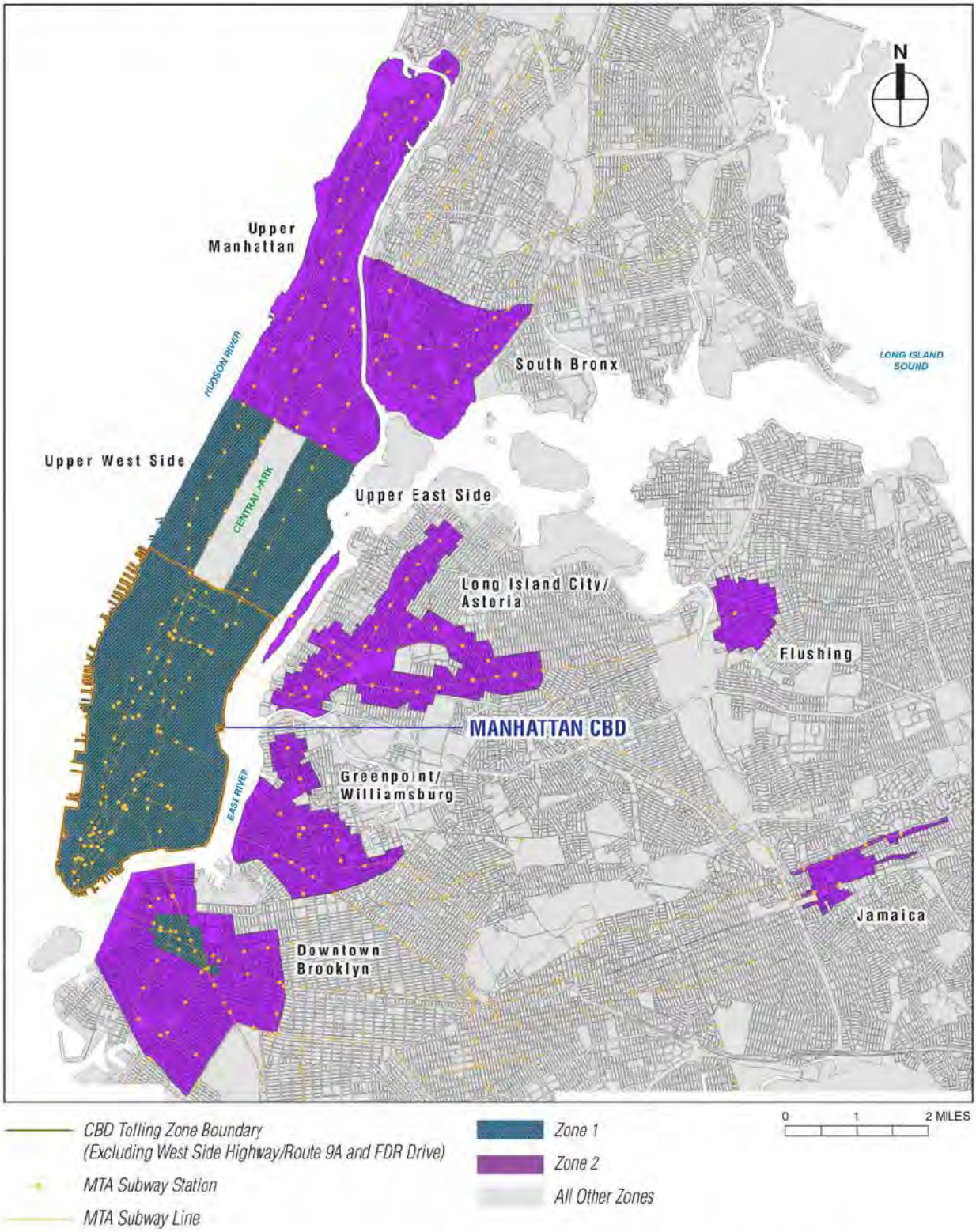
3 According to the *CEQR Technical Manual*, "if the proposed project would generate fewer than 50 peak hour vehicle trips, the need for further traffic analysis would be unlikely." This is because the added traffic congestion from fewer than 50 vehicle trips per hour would likely fall below the published CEQR thresholds defining significant adverse traffic impacts. However, it also states that "proposed projects affecting congested intersections have at times been found to create significant adverse traffic impacts when their trip generation is fewer than 50 peak hour vehicle trips, and therefore, the lead agency, upon consultation with NYCDOT may require analysis of such intersections of concern."

4 The *CEQR Technical Manual* states, "in general, a quarter-mile walk (taking approximately 5 to 10 minutes) is considered the maximum distance from primary off-site parking facilities to the project site," and further explains that parking availability, the destination type, and geography of the area can increase or decrease the maximum distance people are willing to walk from parking to a destination.

5 Based on the FHWA's *Pedestrian Safety Guide for Transit Agencies*, most people are willing to walk for 5 to 10 minutes (or approximately one-quarter to one-half mile) to a transit stop, and people may be willing to walk considerably longer distances when accessing heavy rail services. https://safety.fhwa.dot.gov/ped_bike/ped_transit/ped_transguide/ch4.cfm#a.

6 City of New York Mayor's Office of Environmental Coordination. 2020. *City Environmental Quality Review Technical Manual*. Chapter 16, "Transportation," pp. 16 to 67.

Figure 4D-1. *City Environmental Quality Review Technical Manual* Parking Zones



Source: City of New York 2020 *City Environmental Quality Review Technical Manual*, Map 16-2.
***[Note:** For an audio description, please go to the following link: https://www.youtube.com/watch?v=e3t1w-ENOZ8&list=PLZHkn788ZQJPEY5zv-dr2gzkzMQFMgb_2&index=2.]*

In addition, project-related shortfalls in parking may not constitute an adverse effect if other parking is available within a reasonable walking distance. Outside of Parking Zones 1 and 2, increases in parking demand that result in parking shortfalls can constitute adverse effects when the resulting parking shortfall exceeds more than half of the available on-street and off-street parking spaces within a quarter-mile of the location where the shortfall would occur. This determination should take into consideration the availability and extent of transit in the area and its proximity to the new parking demand, features of a project that result in vehicle trip reductions, and travel modes of customers in the area.

4D.3 AFFECTED ENVIRONMENT

4D.3.1 Regional Study Area

The regional study area for this EA includes 28 counties in the New York metropolitan area, which are the main catchment area for trips to and from the Manhattan CBD (see Chapter 3, "Environmental Analysis Framework," Section 3.3.1.1). The region has an extensive public transit network that includes commuter and intercity rail providing service along routes terminating at or near the Manhattan CBD, buses operating throughout the region, light rail and subways, ferries, and a tramway. Subchapter 4C, "Transportation: Transit," provides a description of transit services throughout the regional study area, including those that serve the Manhattan CBD.

As described in Section 4D.1, the analysis includes an assessment of commuter parking demand at on-street parking and off-street parking, where present, at and near public transit facilities in the regional study area, where the Project's commuter parking effects are anticipated to be most concentrated. Specifically, transportation modeling predicts that increases in vehicular trips to public transit would be highest at and near commuter rail and park-and-ride facilities, and, relatively, that there would be much lower increases in vehicular trips to subway stations, light rail, and other modes of public transit without dedicated commuter parking facilities nearby. Therefore, this subsection evaluates parking utilization and demand at and near commuter rail and park-and-ride facilities, and other subsections discuss general parking utilization and capacity in New York City outside the Manhattan CBD, and in the Manhattan CBD, related to the Project.

While approximately 29 percent of the regional workforce commutes to work via public transit, this share is substantially higher for commuters to jobs in New York City (approximately 56 percent of workers with jobs in New York City use public transportation to travel to work) and is even greater for commuters to jobs in the Manhattan CBD (more than 85 percent of workers with jobs in the Manhattan CBD use public transportation to travel to work (see Tables 6-5 and 6-6 in Chapter 6, "Economic Conditions").[7]

Most of the approximately 400 intercity and commuter rail stations[8] in the regional study area have parking lots and garages for rail passengers to use. The parking facilities at rail stations vary in size from small

[7] Sources: Regional and New York City workforce data from American Community Survey 2015–2018 5-year estimates, U.S. Census Bureau; CBD data from Census Transportation Planning Package, 2012–2016, U.S. Census Bureau.

[8] Metro-North Railroad map. 2022. http://web.mta.info/mnr/html/mnrmap.htm; Long Island Rail Road map. 2022. http://web.mta.info/lirr/Timetable/lirrmap.htm; and New Jersey Transit Commuter Rail map including PATH, Newark, and Hudson Bergen Light Rail. 2022. https://d2g63oyneaimm8.cloudfront.net/sites/default/files/pdfs/rail/Rail_System_Map.pdf.

surface lots to large, multilevel garages and are owned by the transit agency, a private operator, or the municipality where the station is located. Commuter rail stations typically charge a fee to park. Some facilities restrict use to residents of the municipality, some require a monthly permit for their use, and some are available to the general public. An individual rail station might have a combination of parking operators and multiple types of fee structures within one or at multiple parking facilities.

In addition, several other rail and non-rail transit hubs in the regional study area have parking facilities for their customers, such as the PATH Journal Square Station and various commuter park-and-ride lots with access to bus service into New York City. While most commuters using commuter rail and park-and-ride lots drive either alone or in a carpool to the transit facility, others walk, bike, or are dropped off there by local buses, shuttles, and private or for-hire vehicles.

Typically, parking facilities at the regional study area's commuter rail stations and transit hubs are well-used. Many are at capacity (or at least at "effective capacity," when a user perceives an off-street parking facility is full, which for commuter rail parking facilities is typically considered at or exceeding 85 percent utilization), and some facilities have waiting lists for additional parking demand that the parking operators (i.e., transit agency, municipality, or private entity that controls the facility) maintain. Based on information from the Metropolitan Transportation Authority for the Long Island Rail Road and Metro-North Railroad and from NJ TRANSIT, average pre-COVID-19 pandemic parking utilization at transit facilities across the regional study area ranged from approximately 75 percent to 100 percent of capacity, with many individual facilities reaching their effective capacity (see Tables 4D.1.1, 4D.1.2, and 4D.1.3 in Appendix 4D.1, "Transportation: Parking Utilization at Commuter Rail Stations in the Regional Study Area").

4D.3.2 New York City Outside the Manhattan CBD

As described in Section 4D.1, general parking utilization and capacity are discussed in this subsection to characterize the potential effects of the Project on parking. Many neighborhoods throughout New York City have curbside parking on major and minor streets. This parking is subject to regulations that limit long-term parking in business districts and that prohibit parking on some busy streets during peak periods to create capacity for traffic or buses. In addition, neighborhoods throughout New York City are subject to New York City's alternate-side parking regulations, which prohibit parking during certain times to allow street cleaning. In recent years, several New York City programs that promote repurposing on-street parking spaces with other uses have reduced the number of on-street parking spaces. These include Citi Bike, NYCDOT's bike share program, which places bike share docking stations in former on-street parking spaces; Neighborhood Loading Zone, which dedicates more curb space to commercial loading/unloading; Open Restaurants, which allows restaurants and other food-service establishments to convert on-street parking spaces to customer seating as a temporary program during the COVID-19 pandemic enabled through an emergency order; and the Open Streets program using the same emergency order as Open Restaurants, which allows certain street segments to be temporarily closed to through vehicles. New York City is currently transitioning the temporary Open Restaurants and Open Streets programs to be permanent, so the reduced number of on-street parking spaces resulting from those temporary programs is anticipated to continue. Throughout New York City, curbside parking is generally heavily used, with high demand and few available spaces during most times of the day. Although a specific survey was not conducted for this Project or can be cited, parking surveys performed as part of traffic studies in New York City typically show

high levels of weekday daytime utilization for on-street parking. Consequently, on-street spaces are generally not a reliable source of parking and finding available parking spaces that are not already occupied can involve substantial time searching for an available space.

The neighborhoods closest to the Manhattan CBD, including the Upper East Side (i.e., East 59th Street to East 96th Street, from Central Park to the East River), the Upper West Side (i.e., West 59th Street to West 110th Street, from Central Park to the Hudson River), Long Island City in Queens, and Williamsburg and Downtown Brooklyn in Brooklyn, have curbside parking on local streets subject to the regulations noted above. This parking is typically heavily used. Figure 4D-2 shows the locations of these neighborhoods. Some commercial centers in Brooklyn and Queens, including Long Island City, Flushing, and Jamaica in Queens, have public off-street parking facilities, and these too are typically heavily used.

4D.3.3 Manhattan CBD

As described in Section 4D.1, general parking utilization and capacity are discussed in this subsection to characterize the potential effects of the Project on parking. Curbside parking exists throughout the Manhattan CBD. To provide for bus lanes on some north–south avenues, curbside parking is generally restricted during and between the weekday AM and PM peak commuter hours but is allowed overnight and on weekends. Numerous special parking regulations are within the Manhattan CBD, but in general, parking is allowed on both curbsides of the east–west streets, except for two-way, primary crosstown streets such as 14th Street, 23rd Street, 34th Street, 42nd Street, and 57th Street and near the entrances to and exits from bridges and tunnels connecting to the Manhattan CBD. Parking on major avenues and on side streets within Midtown Manhattan is generally metered to limit parking duration, and parking on all streets is subject to New York City's alternate-side parking regulations, which prohibit parking during certain times to allow street cleaning. The Manhattan CBD is subject to the same programs (e.g., Citi Bike, Neighborhood Loading Zone, Open Restaurants, and Open Streets) that have reduced and will continue to reduce the amount of on-street parking in New York City outside of the Manhattan CBD (see Section 4D.3.2). Throughout the Manhattan CBD, curbside parking is in high demand and is heavily used, with limited available spaces during most times of typical weekdays. Additionally, metered parking rates regulated by NYCDOT are priced higher in the Manhattan CBD than elsewhere in New York City.

The Manhattan CBD has approximately 600 off-street parking facilities (surface lots and parking garages) with a total capacity of nearly 90,000 parking spaces. While a specific survey was not conducted for this Project, surveys for numerous development projects in the Manhattan CBD areas of Lower Manhattan and Midtown[9] over the past several years have found that off-street parking facilities were at or near capacity on weekdays throughout the Manhattan CBD. In many parts of the Manhattan CBD near shopping and entertainment venues (e.g., Rockefeller Center and the Theater District) as well as major institutional uses (e.g., hospitals and museums), off-street parking facilities are heavily used in the evenings and on weekends. In addition to off-street parking for periodic use by the public, many off-street parking facilities also provide monthly parking for residents of the Manhattan CBD and commuters.

[9] Source: Recently completed Environmental Impact Statements for projects proposed in the Manhattan CBD, including *Phased Redevelopment of Governors Island South Island Development Zones Final Second Supplemental Generic EIS* (2021), *Two Bridges Large Scale Residential Development Final EIS* (2018), and *Greater East Midtown Rezoning Final EIS* (2017).

Figure 4D-2. General Location of Neighborhoods Near the Manhattan Central Business District

Note: The MTA Reform and Traffic Mobility Act defines the Manhattan CBD as the area south of and inclusive of 60th Street but excluding the West Side Highway/Route 9A and the FDR Drive

Source: ArcGIS Online, https://www.arcgis.com/index.html.

4D.4 ENVIRONMENTAL CONSEQUENCES

4D.4.1 No Action Alternative

The No Action Alternative would not implement a vehicular tolling program. The No Action Alternative would not substantially change demand for on-street and off-street parking in the regional study area, or within or outside the Manhattan CBD compared to existing conditions. In the No Action Alternative, the demand for parking facilities and curbside spaces within and outside the Manhattan CBD would likely be comparable to current conditions, with limited available capacity, especially near heavily used transit stations.

4D.4.2 CBD Tolling Alternative

REGIONAL STUDY AREA

The BPM results show that all tolling scenarios for the CBD Tolling Alternative would decrease vehicle trips entering and leaving the Manhattan CBD with a corresponding increase in transit trips to the Manhattan CBD. There would be as much as a 9.2 percent decrease in vehicle-miles traveled (VMT) to as little as a 7.6 percent decrease in VMT for the Manhattan CBD from the Project, compared to the No Action Alternative (see Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"). There would be as little as a 0.7 percent increase in transit share to as much as a 1.6 percent increase in transit share from the Project, compared to the No Action Alternative. Consequently, there would be a decrease in demand for parking within the Manhattan CBD and an increase in demand for parking at the region's transit stations and commuter park-and-ride locations.

As discussed in Subchapter 4C, "Transportation: Transit," the evaluation of the effects of the CBD Tolling Alternative on transit ridership (subway, commuter rail, and bus passengers) outside the Manhattan CBD considered groups of stations together, rather than individual stations. In addition, projected transit ridership increases as reported by the BPM at individual transit stations (including commuter rail or bus stations, park-and-ride facilities, and subway stations) were also evaluated to forecast the number of new vehicle trips they would create at each of the localized station groupings. As described in Section 4D.3 transportation modeling predicts that increases in vehicular trips to public transit would be highest at and near commuter rail and park-and-ride facilities, and, relatively, there would be much lower increases in vehicular trips to subway stations, light rail, and other modes of public transit without dedicated commuter parking facilities nearby. Although there could initially be some modest level of vehicular traffic searching for parking in neighborhoods outside the Manhattan CBD to avoid the toll, the behavior would most likely be short-lived as part of the adjustment process. Time spent by motorists searching unsuccessfully for free, available parking just outside the Manhattan CBD boundary would eventually result in the outcomes anticipated by the transportation modeling, which forecasts an overall reduction in vehicular traffic and an increase in transit use in the regional study area.

Based on the BPM results, the increase in commuters at individual stations or park-and-ride facilities outside the Manhattan CBD would be distributed throughout the region, and no locations would have

increases in vehicle trips of 50 or more vehicles in the peak hour for any tolling scenario.*[10]* In the regional study area outside New York City, the increase in transit ridership from the Project would primarily be served by commuter rail and bus. Commuter and intercity rail make up 11.4 percent of AM peak-period person-trips to and from the Manhattan CBD on an average weekday (see Subchapter 4C, "Transportation: Transit"). As stated in Subchapter 4C, "MTA bus services account for approximately 1.6 percent of all trips into and out of the Manhattan CBD. NJ TRANSIT bus service carries about 5.3 percent of all trips. Other private bus carriers (such as Greyhound, Coach USA, Academy, DeCamp, and Lakeland) with service to the Port Authority Bus Terminal and on-street in Manhattan account for less than 1 percent of all trips into and out of the Manhattan CBD." Therefore, the 0.7 to 1.6 percent increase in transit usage from the Project (see Table 4A-8 in Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling") would be distributed among 400 commuter rail stations consisting of Metro-North, LIRR, and NJ TRANSIT, The PATH service, MTA bus, NJ TRANSIT Bus, and private carriers, which would not generate more than 50 vehicles per hour at any transit station or commuter park-and-ride location. Moreover, the new vehicle trips at stations would include some customers who would be dropped off without parking and therefore would not add to the demand for parking. Because other modes of public transit in the regional study area (e.g., subways, light rail) would incur even fewer additional vehicle trips as a result of the Project, those locations would also not exceed 50 more vehicles in the peak hour for any tolling scenario. Consequently, using the tiered methodology of the *CEQR Technical Manual* for analysis of parking, no detailed analysis of parking is warranted, and it can therefore be concluded that no adverse effect would occur to parking conditions at locations in the regional study area.

Although there would be no adverse effect on parking utilization based on the *CEQR Technical Manual* methodology, the Project would generate parking demand near some public transit facilities in the regional study area, which would exceed supply if the facility is currently at or over capacity.

NEW YORK CITY OUTSIDE THE MANHATTAN CBD

With the CBD Tolling Alternative, the number of commuters and visitors to the Manhattan CBD who would use transit for their journey would increase in all tolling scenarios. As described in Subchapter 4A, the change in the transit mode share would range from an increase of 1.0 percent (Tolling Scenario B) to 2.3 percent (Tolling Scenario E). Some of these new transit users would drive to transit stations in New York City outside the Manhattan CBD to access transit to complete their journey. However, based on lower auto ownership rates and lack of parking availability in New York City, as compared to the regional study area outside New York City, the driving trips to parking would be at far lower numbers than commuter rail and park-and-ride facilities described in the regional study area. Consequently, the CBD Tolling Alternative would slightly increase the number of drivers who would seek parking near transit facilities in New York City outside the Manhattan CBD.

[10 For the Final EA, the Project Sponsors committed to additional mitigation measures (see Chapter 16, "Summary of Effects," Table 16-2). These new mitigation commitments neither require a change in the tolling scenarios used for the analyses in the EA nor change the fundamental conclusions of the EA (see Chapter 3, "Environmental Assessment Framework," Section 3.3.3).]

Based on the BPM results, the increase in the number of travelers at individual transit facilities in New York City outside the Manhattan CBD would be widely distributed. Within New York City, the 0.7 to 1.6 percent increase in transit usage from the Project would be distributed among commuter rail and subway stations within New York City. Subways, which carry 61.9 percent of these commuters, most often do not have dedicated parking facilities and little to no available on-street or off-street parking nearby. Parking at commuter rail stations within New York City is also very limited. Moreover, the new vehicle trips at transit facilities would include some customers who would be dropped off without parking and therefore would not add to the demand for parking. According to Metro-North Railroad and Long Island Rail Road data, approximately 50 percent and 60 percent of transit passengers, respectively, drive and park to access stations, on average, during the AM peak period.

Applying an average, regional vehicle occupancy factor of 1.10 from 2012 to 2016 Census Transportation Planning Products Reverse Journey to Work data to the new transit riders that are distributed across transit stations within the study area, no station would exceed 32 vehicles per hour (vph) at commuter rail stations or 28 vph at subway stations. Consequently, using the tiered methodology of the *CEQR Technical Manual*, no adverse effect would occur to parking conditions at locations in New York City outside the Manhattan CBD.

There is potential that the CBD Tolling Alternative would increase parking demand immediately outside the Manhattan CBD in the neighborhoods just north of the Manhattan CBD boundary at 60th Street (the Upper East Side and Upper West Side); see **Figure 4D-2** for their locations. Modeling conducted for this Project using the BPM shows that the number of cars on each of the avenues immediately north of 60th Street would decrease under all tolling scenarios; therefore, there would not be an increase in parking demand in those neighborhoods. However, there may be economic considerations and, as described in **Chapter 6, "Economic Conditions," Section 6.4.3.2**, if an increase in demand were to occur just north of the 60th Street Manhattan CBD boundary, that demand would be accommodated either by the existing off-street parking spaces where available or—if there were capacity constraints—through upward adjustments in parking fees. These factors would likely offset potential changes in parking behavior resulting from the CBD Tolling Alternative. In any case, as noted earlier in the discussion of the *CEQR Technical Manual* methodology used to assess parking changes associated with projects in New York City, increases in parking demand that cause parking shortfalls in Parking Zones 1 and 2 are not considered adverse effects (see **Figure 4D-1**).

Although there would be no adverse effect on parking utilization based on the *CEQR Technical Manual* methodology, the Project would generate parking demand outside the Manhattan CBD, which could exceed supply if the area is currently at or over capacity. To further examine the potential effects of the Project on parking supply and demand, the MTA Reform and Traffic Mobility Act states that the City of New York must study the effects of the Project on parking within and around the Manhattan CBD, and a report must be completed 18 months after the Project commences.

MANHATTAN CBD

The CBD Tolling Alternative would decrease the number of daily private vehicle trips to the Manhattan CBD under all tolling scenarios. As shown in **Table 4A-9 in Subchapter 4A, "Transportation: Regional**

Transportation Effects and Modeling," the decrease in vehicle trips would range from 15,536 trips by private vehicle (drive alone or carpool) in Tolling Scenario A to approximately 41,936 trips by private vehicle (drive alone or carpool) in Tolling Scenario E. The decrease in vehicle trips would also result in a decrease in parking demand in the Manhattan CBD. While the demand for parking spaces in the Manhattan CBD from residents within the Manhattan CBD would likely generally remain unchanged, the demand from those driving into the Manhattan CBD each day from other locations would decrease in comparison to the No Action Alternative. This reduction would be spread across the approximately 600 off-street parking facilities with nearly 90,000 parking spaces in the Manhattan CBD as well as the numerous on-street parking spaces in the Manhattan CBD. (Chapter 6, "Economic Conditions," provides an analysis of the potential economic effects of the CBD Tolling Alternative on the off-street parking industry in the Manhattan CBD.) Therefore, the CBD Tolling Alternative would not create or exacerbate a parking shortfall in the Manhattan CBD.

4D.5 CONCLUSION

Most of the parking facilities near transit stations are well-used with limited available capacity, and the Project would generate parking demand near some public transit facilities in the regional study area, which would exceed supply if the facility is currently at or over capacity. The increase in commuters at individual stations or park-and-ride facilities would be distributed throughout the region, and no locations would have increases in vehicle trips of 50 or more vehicles in the peak hour for any tolling scenario. Therefore, no adverse effect on parking conditions would occur at locations in the regional study area.

The Project would generate parking demand outside the Manhattan CBD, which could exceed supply if the area is currently at or over capacity. To further examine the potential effects of the Project on parking supply and demand, the MTA Reform and Traffic Mobility Act states that the City of New York must study the effects of the Project on parking within and around the Manhattan CBD, and a report must be completed 18 months after the Project commences.

While the demand for parking spaces in the Manhattan CBD from residents within the Manhattan CBD would likely generally remain unchanged, the demand from those driving into the Manhattan CBD each day from other locations would decrease in comparison to the No Action Alternative.

Table 4D-1 summarizes the effects of the CBD Tolling Alternative on parking.

Table 4D-1. Summary of Effects of the CBD Tolling Alternative on Parking

SUMMARY OF EFFECTS	EFFECT FOR ALL TOLLING SCENARIOS	POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
All tolling scenarios would result in a reduction in parking demand within the Manhattan CBD of a similar magnitude to the reduction in auto trips into the Manhattan CBD. With a shift from driving to transit, there would be increased parking demand at subway and commuter rail stations and park-and-ride facilities outside the Manhattan CBD.	Reduction in parking demand due to reduction in auto trips to the Manhattan CBD; small changes in parking demand at transit facilities outside the Manhattan CBD, corresponding to increased commuter rail and subway ridership	No	**No mitigation needed.** No adverse effects.

4E. Pedestrians and Bicycles

4E.1 INTRODUCTION

This subchapter describes the potential effects of the CBD Tolling Alternative on pedestrian circulation; bicycle routes and bicycle infrastructure; and vehicular, pedestrian, and bicycle safety.

The regional study area for this subchapter includes commuter and intercity rail stations providing service along routes terminating within or near the Manhattan CBD, and bus stations, light rail and subway stations, ferry stops, and a tramway station ("transit stations") in the 28-county regional study area. Transportation modeling predicts that increases in pedestrian and bicycle trips to/from public transit would be highest at and near commuter rail and subway stations with higher ridership and high occurrences of walk/bike mode share, and this subchapter examines the potential effects of implementing the CBD Tolling Alternative at such locations. The modeling shows that there would be lower increases in new trips on light rail, buses, ferries, and other modes of public transit with lower ridership and/or higher occurrences of vehicular mode share.

The first part of this subchapter summarizes potential changes in pedestrian circulation near transit stations in the regional study area that would result in an increase in passenger activity from the Project. The second part of this subchapter presents a qualitative assessment of the Project's effects on existing and future bicycle facilities (i.e., on-street bicycle lanes or shared-lane routes), including bicycle trips generated by the Project's forecast increased activity at and near transit stations. The final section of this subchapter is an assessment of vehicular, bicycle, and pedestrian safety for intersections where detailed pedestrian analyses were performed.

4E.2 PEDESTRIAN CIRCULATION

4E.2.1 Methodology

The analysis of pedestrian circulation in this subchapter considers the potential for increased crowding on sidewalks, corners, and crosswalks at or around transit stations where the CBD Tolling Alternative is predicted to increase the number of passengers. This would occur because of changes to travel patterns, where some people would no longer drive to the Manhattan CBD and instead use transit to travel there.

This analysis was conducted using the methodologies and effects criteria outlined in the City of New York's *CEQR Technical Manual*. The FHWA and NYSDOT have design criteria for pedestrian facilities, but the guidance does not lay out procedures to identify potential adverse effects from project-generated increases in foot or bicycle traffic in dense urban areas such as New York City. It should be noted that *CEQR Technical Manual* guidance does not conflict with the Federal and state design criteria for pedestrian and bicycle facilities.

Using the *CEQR Technical Manual* methodologies, the analysis included the following steps:

- Based on the New York Metropolitan Transportation Council (NYMTC) Best Practice Manual (BPM) results for the Project (Subchapter 4C, "Transportation: Transit"), the analysis identified all transit stations where the CBD Tolling Alternative would result in 200 or more new pedestrian trips in the busiest hour for any tolling scenario. (The busiest hour is the "peak hour," and was based on observed pedestrian conditions; this was not necessarily the same peak hour that was used for the traffic analyses discussed in Subchapter 4B, "Transportation: Highways and Local Intersections.")
- For transit stations where the CBD Tolling Alternative would result in 200 or more new pedestrian trips in the peak hour for any tolling scenario, the analysis identified specific locations—such as at a particular intersection—that would have an increase of 200 or more new pedestrian trips in the peak hour. Based on the *CEQR Technical Manual* methodology, this is the level of new pedestrian trips with the potential to result in an adverse effect on pedestrian flows. For these transit stations, additional analysis was conducted of the effects of additional pedestrians resulting from the Project.
- For transit stations where the CBD Tolling Alternative would result in 200 or more new pedestrian trips at a specific location in the peak hour for any tolling scenario, the analysis involved assigning those trips along the most direct and logical routes to workplaces, residences, and other key destinations to identify individual pedestrian elements that would experience an increase in pedestrian activity in the peak hour. Pedestrian elements are defined as the street components used by people walking, including sidewalks, crosswalks, and street corners (called "corner reservoirs"[1]). Transit elements such as subway station control area, stairs, escalators, and platforms that are not considered pedestrian elements are described in Subchapter 4C, "Transportation: Transit"; therefore, these elements are excluded from the discussion below. This quantified analysis used the methodologies presented in the 2010 *Highway Capacity Manual*. Using these methodologies, the primary performance measure for pedestrian circulation is pedestrian space, expressed as square feet per pedestrian (SFP), which indicates the quality of pedestrian movement and comfort. The calculation of SFP was based on the pedestrian volumes by direction, the effective sidewalk or walkway width, and pedestrians' average walking speeds. The SFP formed the basis for a sidewalk level of service (LOS) analysis.[2]
- At transit stations where the increase in pedestrians would be fewer than 200 people in the peak hour at any specific location, no adverse effect would occur to pedestrian conditions for any tolling scenario, based on the *CEQR Technical Manual* guidance.

As part of the analyses, data regarding existing pedestrian volumes as well as traffic operations and volumes (for turning vehicles that conflict with pedestrians within a crosswalk) were collected in June and October 2019 at locations identified later in this subchapter. These data were collected during the weekday AM, midday, and PM peak periods (7:00 a.m. to 10:00 a.m., 11:00 a.m. to 2:00 p.m., and 4:00 p.m. to 7:00 p.m.,

[1] As described in Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses," corner reservoirs are the corner areas of sidewalks, serving both standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the street or moving around the corner).

[2] As described in Appendix 4E, LOS is a scale used to describe the operations of traffic, transit, or pedestrian facilities based on quantified information. LOS ranges from A (uncongested) to F (substantially congested/poor operation). The specific parameters used to define LOS vary by the type of analysis.

respectively). Inventories of total and effective widths, crosswalk lengths, street furniture, and other obstructions were conducted to provide appropriate inputs for the operational analyses. NYCDOT provided official traffic signal timings for the analysis locations.

An annual background growth rate of 0.50 percent was conservatively applied to estimate the No Action Alternative pedestrian volumes in the Manhattan CBD at the specific locations analyzed (to account for discrete trip-making from large development projects underway near the analysis locations). Note that this subchapter did apply a background growth factor while Subchapter 4B, "Transportation: Highways and Local Intersections," and Subchapter 4C, "Transportation: Transit," did not because, on a broader basis, the pre-COVID-19 pandemic traffic and transit conditions would be representative of the 2023 analysis year. MTA anticipates that transit ridership—and therefore pedestrian activity surrounding transit stations—will reach previous levels several years after the 2020 decline in ridership.[3]

Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses," presents details on the *CEQR Technical Manual* analysis methodologies, including adverse effect criteria.

TOLLING SCENARIO SELECTED FOR THIS PEDESTRIAN ANALYSIS

The tolling scenario that would result in the greatest increase in new pedestrian trips at transit stations within the Manhattan CBD was used for quantified analysis.[4] Based on the BPM results (Subchapter 4C, "Transportation: Transit"), the representative tolling scenario with the *[greatest]* effect is Tolling Scenario E, which *[would]* result in the largest number of new transit riders and therefore would add the highest pedestrian volumes on the sidewalks, street corners, and crosswalks adjacent to transit stations within the Manhattan CBD. Other tolling scenarios would generate fewer new pedestrian trips. (See Chapter 2, "Project Alternatives," for a description of the tolling scenarios evaluated.)*[5]*

LOCATIONS FOR PEDESTRIAN ANALYSIS

As discussed earlier in this subchapter, the first steps in the analysis were to identify transit stations throughout the 28-county region where the CBD Tolling Alternative would add 200 or more new pedestrian trips in the peak hour, and then to identify any of those transit stations where the CBD Tolling Alternative would add 200 or more new pedestrian trips on any individual pedestrian element. Figure 4E-1 shows the pedestrian analysis study area. Most transit stations in the region—both within and outside the Manhattan CBD—would have an increase of fewer than 200 peak-hour pedestrian trips under the CBD Tolling Alternative. Based on the BPM results, the CBD Tolling Alternative (Tolling Scenario E) would result in more than 200 new peak-hour pedestrian trips at the 16 transit stations identified in Table 4E-1.

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[3] As described in Subchapter 4C, "Transportation: Transit," public transit ridership may reach 80 to 92 percent of pre-pandemic levels by end of 2024 according to an MTA-commissioned analysis prepared by McKinsey & Company.

[4] As described in Chapter 2, "Project Alternatives," this document evaluates multiple tolling scenarios to identify the range of potential effects that could occur from implementing the Project. These tolling scenarios have a range of different toll amounts and toll structures, such as crossing credits, discounts, and/or exemptions. Ultimately, the TBTA Board would determine the toll amounts and toll structure to be implemented, which might differ from the tolling scenarios evaluated in this document.

[5 For the Final EA, the Project Sponsors committed to additional mitigation measures (see Chapter 16, "Summary of Effects," Table 16-2). These new mitigation commitments neither require a change in the tolling scenarios used for the analyses in the EA nor change the fundamental conclusions of the EA (see Chapter 3, "Environmental Assessment Framework," Section 3.3.3).]

Figure 4E-1. Pedestrian Analysis Study Area

Sources: ArcGIS Online, https://www.arcgis.com/index.html.

Table 4E-1. Transit Station Pedestrian Trip Assessment

TRANSIT STATIONS THAT WOULD HAVE MORE THAN 200 NEW PEDESTRIANS PER HOUR	INDIVIDUAL PEDESTRIAN ELEMENT THAT WOULD HAVE MORE THAN 200 NEW PEDESTRIANS PER HOUR
1. 14 Street–Union Square, Manhattan CBD (Nos. 4/5/6, and L/N/R/Q/W subway lines)	No
2. Herald Square/Penn Station New York, Manhattan CBD, includes the following: a. 34 Street–Herald Square subway station (B/D/F/ M/N/Q/R/W subway lines) b. 34 Street–Penn Station subway station (Nos. 1/2/3 subway lines) c. 34 Street–Penn Station subway station (A/C/E subway lines) d. 33rd Street Station (PATH) e. New York Pennsylvania Station (Amtrak, LIRR, NJ TRANSIT)	Yes
3. 42 Street–Bryant Park, Manhattan CBD (B/D/F/M subway lines and connection to Fifth Avenue [No. 7 subway line])	No
4. 47-50 Streets–Rockefeller Center, Manhattan CBD (B/D/F/M subway lines)	No
5. Broadway–Lafayette Street, Manhattan CBD (B/D/F/M and No. 6 subway lines)	No
6. Canal Street, Manhattan CBD (J/N/Q/R/W/Z and No. 6 subway lines)	No
7. Canal Street, Manhattan CBD (A/C/E subway lines)	No
8. World Trade Center/Fulton Street, Manhattan CBD, includes the following: a. Fulton Street subway stations (Nos. 2/3/4/5 and A/C/J/Z subway lines) b. World Trade Center Station (PATH) c. Cortlandt Street Station (R/W subway lines)	Yes
9. Flushing Main Street, Queens County, New York (No. 7 subway line)	No
10. Atlantic Terminal, Kings County (Brooklyn), New York, includes the following: a. Atlantic Avenue–Barclays Center subway station (Nos. 2/3/4/5 and B/D/N/Q/R/W subway lines) b. Atlantic Terminal (LIRR)	No
11. Grand Central Terminal, Manhattan CBD, includes the following: a. 42 Street–Grand Central subway station (Nos. 4/5/6/7 and S subway lines) b. Grand Central Terminal (Metro-North Railroad)	No
12. Lexington Avenue/53 Street, Manhattan CBD (E/M subway lines and connection to 51 Street [No. 6 subway line])	No
13. Second Avenue, Manhattan CBD (F/M subway lines)	No
14. Wall Street, Manhattan CBD (Nos. 2/3 subway lines)	No
15. Secaucus, Hudson County, New Jersey (NJ TRANSIT)	No
16. Hoboken Terminal, Hudson County, New Jersey (PATH and NJ TRANSIT)	No

Source: WSP, Best Practice Model 2021.

Following the steps described in the discussion of methodology, the following two areas (**Table 4E-1 and Figure 4E-1**) would have more than 200 new pedestrians in the peak hour at an individual pedestrian element (i.e., crosswalk, sidewalk, or corner reservoir):

- Herald Square/Penn Station New York
- World Trade Center/Fulton Street

Although 34 Street–Herald Square and 34 Street–Penn Station are separate stations, the effect of predicted pedestrian trips resulting from the CBD Tolling Alternative at these two stations were considered together, because the stations are in proximity to one another and many of the pedestrian routings to and from each

station would overlap. Similarly, pedestrian trips resulting from the CBD Tolling Alternative at the Cortlandt Street Station (R/W subway lines), WTC Cortland Street (1), and World Trade Center (PATH and E subway line) were considered together with Fulton Street because many of the pedestrian routings to and from each station would be in proximity and would share primary pedestrian routes. Therefore, Herald Square/Penn Station New York and World Trade Center/Fulton Street were considered as areas rather than stations in the pedestrian conditions analysis.

4E.2.2 Affected Environment

Existing pedestrian and traffic data were collected in June and October 2019 at the analysis locations adjacent to Herald Square/Penn Station New York and World Trade Center/Fulton Street. As previously described, the count data is conservative for characterizing existing (2021) pedestrian conditions. Peak-hour pedestrian volumes were tabulated from the peak-period pedestrian data collected in June 2019. Based on the collected data, the weekday AM and PM peak hours of pedestrian volumes at both analysis areas were 8:15 a.m. to 9:15 a.m. and 5:00 p.m. to 6:00 p.m., respectively, representing the peak work arrival and departure times in and around the transit facilities. (Midday pedestrian circulation would not vary because the predominant Project-generated change in activity would be during the weekday AM and PM peak hours when commuters would use transit in higher numbers. During the midday peak hour, commuters would mainly have the same pedestrian travel patterns irrespective of how the Project would change the mode shift in the AM and PM peak-hour work trip.) Using the methodology presented for pedestrian circulation, this section summarizes, and **Table 4E-2** presents, the LOS analysis results for the study area pedestrian elements near the two transit station areas. **Figure 4E-2** presents the locations of all analyzed pedestrian elements. (**Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses,"** presents the pedestrian LOS tables and peak-hour pedestrian volume figures.)

Table 4E-2. Existing (2021) Conditions Pedestrian Analysis Results (2019)

TRANSIT STATION AREA	PEAK HOUR	PEDESTRIAN ELEMENT	NUMBER OF ANALYSIS LOCATIONS	NUMBER OF LOCATIONS THAT OPERATE AT			
				LOS C OR BETTER	LOS D	LOS E	LOS F
Herald Square/Penn Station New York	AM	Sidewalks	6	5	1	0	0
		Corner Reservoirs	5	5	0	0	0
		Crosswalks	3	1	0	2	0
	PM	Sidewalks	6	5	1	0	0
		Corner Reservoirs	5	5	0	0	0
		Crosswalks	3	1	0	1	1
World Trade Center/Fulton Street	AM	Sidewalks	1	1	0	0	0
		Corner Reservoirs	1	1	0	0	0
	PM	Sidewalks	1	1	0	0	0
		Corner Reservoirs	1	1	0	0	0

Source: AKRF, Inc.

The following two sections provide further detail on the pedestrian elements and results presented in the above table, and briefly describe the process by which the pedestrian elements were selected for detailed analysis using the previously presented methodology.

HERALD SQUARE/PENN STATION NEW YORK

The detailed assignment of pedestrian trips near Herald Square/Penn Station New York resulted in 2,051 new pedestrian trips in both AM and PM peak hours, which would result in 200 or more peak-hour pedestrian trips at the following 14 pedestrian elements:

- North sidewalk of West 34th Street between Seventh and Eighth Avenues
- West sidewalk of Eighth Avenue between West 35th and West 34th Streets
- North sidewalk of West 34th Street between Broadway and Seventh Avenue
- North sidewalk of West 34th Street between Seventh Avenue and Broadway
- North sidewalk along West 34th Street between Sixth and Fifth Avenues
- North sidewalk of West 32nd Street between Sixth and Seventh Avenues
- Northwest corner of Eighth Avenue and West 34th Street
- Southwest corner of Eighth Avenue and West 34th Street
- Northeast corner of Eighth Avenue and West 34th Street
- Northeast corner of Sixth Avenue and West 34th Street
- Northeast corner of Seventh Avenue and West 32nd Street
- North crosswalk of Eighth Avenue and West 34th Street
- North crosswalk of Sixth Avenue and West 34th Street
- North crosswalk of Seventh Avenue and West 32nd Street

Most of these pedestrian elements operate at LOS D (which is considered marginally acceptable) operations or better. The following locations operate at congested LOS E or LOS F conditions:

- The north crosswalk of Sixth Avenue and West 34th Street operates at LOS E in the AM peak hour and LOS F in the PM peak hour.
- The north crosswalk of Seventh Avenue and West 32nd Street operates at LOS E during the AM and PM peak hours.

WORLD TRADE CENTER/FULTON STREET

Based on the detailed assignment of pedestrian trips near World Trade Center/Fulton Street (1,222 new pedestrian trips in the peak hour), the CBD Tolling Alternative would result in 200 or more peak-hour pedestrian trips at the following two pedestrian elements:

- West sidewalk along Broadway between Liberty and Cortlandt Streets
- Northwest corner of Broadway and Liberty Street

Both pedestrian elements operate at acceptable LOS C or better during both peak hours.

4E.2.3 Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, the Project Sponsors would not implement a vehicular tolling program. Pedestrian volumes would be similar to pre-pandemic levels as described above. (No Action Alternative pedestrian volumes were increased by 0.5 percent to reflect potential growth from new development in the area.) In the No Action Alternative, all the analysis locations would continue to operate at the same LOS as existing conditions. (**Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses,"** presents the detailed pedestrian LOS tables and peak-hour pedestrian volume figures.)

CBD TOLLING ALTERNATIVE

The CBD Tolling Alternative would result in increased pedestrian activity near transit stations throughout the regional study area. However, the increased volumes at many locations would not adversely affect pedestrian circulation or the LOS of sidewalks, corners, and crosswalks. At most transit stations presented in **Table 4E-1**, the volume of pedestrian trips would be distributed among different station entrances and different locations around the station, and the CBD Tolling Alternative would not result in adverse effects on pedestrian conditions. Additionally, because the additional volume of pedestrian trips generated by the Project adjacent to all other transit facilities in the regional study area would be even lower than at commuter rail and subway stations presented in **Table 4E-1**, the CBD Tolling Alternative would not result in adverse effects on pedestrian conditions at other transit facilities.

For the Herald Square/Penn Station New York and World Trade Center/Fulton Street areas, the projected increments for Tolling Scenario E would exceed 200 trips in the peak hour; therefore, an analysis was conducted to identify any adverse effects on pedestrian circulation. The pedestrian volumes generated by Tolling Scenario E were added to the No Action Alternative volumes to determine the CBD Tolling Alternative volumes (**Table 4E-3**). (**Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses,"** presents the detailed pedestrian LOS tables and peak-hour pedestrian volume figures.)

Table 4E-3. CBD Tolling Alternative 2023 Pedestrian Analysis Results

TRANSIT STATION AREA	PEAK HOUR	PEDESTRIAN ELEMENT	NUMBER OF ANALYSIS LOCATIONS	NUMBER OF LOCATIONS THAT WOULD OPERATE AT			
				LOS C OR BETTER	LOS D	LOS E	LOS F
Herald Square/Penn Station New York	AM	Sidewalks	6	4	2	0	0
		Corner Reservoirs	5	5	0	0	0
		Crosswalks	3	1	0	2	0
	PM	Sidewalks	6	5	1	0	0
		Corner Reservoirs	5	5	0	0	0
		Crosswalks	3	1	0	1	1
World Trade Center/Fulton Street	AM	Sidewalks	1	1	0	0	0
		Corner Reservoirs	1	0	1	0	0
	PM	Sidewalks	1	1	0	0	0
		Corner Reservoirs	1	1	0	0	0

Source: AKRF, Inc.

Herald Square/Penn Station New York

As under existing and No Action Alternative conditions, with implementation of the CBD Tolling Alternative, all analysis locations near Herald Square/Penn Station New York would operate at marginally acceptable LOS D or better except for the following:

- The north crosswalk of Sixth Avenue and West 34th Street would operate at LOS E in the AM peak hour and LOS F in the PM peak hour.
- The north crosswalk of Seventh Avenue and West 32nd Street would operate at LOS E during the AM and PM peak hours.

Although there would be no change in the number of congested LOS E or LOS F pedestrian elements with or without the Project, there would be slight deteriorations in SFP values. Based on the *CEQR Technical Manual* adverse effects criteria (Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses"), the CBD Tolling Alternative could potentially result in adverse pedestrian effects near Herald Square/Penn Station New York, as follows:

- The west sidewalk of Eighth Avenue between West 34th and West 35th Streets would operate at LOS D with a decrease of 3.2 SFP in the AM peak hour and 2.9 SFP in the PM peak hour compared to the No Action Alternative.
- The Sixth Avenue and West 34th Street north crosswalk would operate at LOS E with a decrease of 2.2 SFP in the AM peak hour and at LOS F with a decrease of 0.8 SFP in the PM peak hour compared to the No Action Alternative.
- The Seventh Avenue and West 32nd Street north crosswalk would operate at LOS E with a decrease of 1.3 SFP in the AM peak hour compared to the No Action Alternative.

Figure 4E-2 shows the locations of adverse effects. The adverse effects at these three locations will be mitigated through standard measures that will be implemented as part of the Project under any tolling scenario, if needed. None of these measures would affect existing bicycle infrastructure in the street. Any additional vehicular traffic generated by increased transit activity related to the Project at transit hubs in the 28-county regional study area is not anticipated to measurably reduce safety conditions because this modest increased activity would be along routes already traveled by high volumes of traffic. Increased pedestrian space on sidewalks and crosswalks can be achieved via physical widening and/or removing or relocating obstructions. Table 4E-4 shows the recommended measures and predicted conditions with their implementation. While potential measures are shown, each specific treatment for attaining increased pedestrian space at the affected locations will be developed in coordination with NYCDOT prior to its implementation. The Project Sponsors will undertake monitoring at the locations near Herald Square/Penn Station with identified potential adverse effects, including pre-implementation baselining and monitoring before and after the first year after implementation of the Project, starting no sooner than two months after implementation to account for a potential initial period of fluctuation in travel behavior.[6]

[6] For London's congestion zone, a Transit Cooperative Research Program report noted that traffic patterns stabilized at six weeks after charging began. See Chapter 14, "Road Value Pricing" in *Transit Cooperative Research Program Report 95: Traveler Response to Transportation System Changes*. p. 14-13. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c14.pdf.

Figure 4E-2. Adverse Pedestrian Effects near Herald Square/Penn Station New York

Corner
Crosswalk
Crosswalk (Adversely Affected Element)
Sidewalk
Sidewalk (Adversely Affected Element)
Park or Recreational Resource

Sources: ArcGIS Online, https://www.arcgis.com/index.html.

Table 4E-4. No Action Alternative, CBD Tolling Alternative, and CBD Tolling Alternative with Improvement Measures—Pedestrian Level of Service Analysis—Herald Square/Penn Station New York

LOCATION	PROJECT IMPROVEMENT MEASURES	NO ACTION		CBD TOLLING		CBD TOLLING (IMPROVED)	
		SFP	LOS	SFP	LOS	SFP	LOS
Weekday AM Peak Hour							
West sidewalk along Eighth Avenue between West 34th Street and West 35th Street	Provide 0.5 feet of additional width by removing constricting sidewalk obstruction (relocate movable planter so it is not directly across from parking sign pole; easy to implement).	31.5	D	28.3	D	31.4	D
Sixth Avenue and West 34th Street: north crosswalk	Widen the crosswalk by 2 feet (easy to implement).	12.8	E	10.6	E	11.8	E
Seventh Avenue and West 32nd Street: north crosswalk	Widen the crosswalk by 1 foot (easy to implement).	12.7	E	11.4	E	12.0	E
Weekday PM Peak Hour							
West sidewalk along Eighth Avenue between West 34th Street and West 35th Street	Provide 0.5 feet of additional width by removing constricting sidewalk obstruction (relocate movable planter so it is not directly across from parking sign pole; easy to implement).	28.6	D	25.7	D	28.7	D
Sixth Avenue and West 34th Street: north crosswalk	Widen the crosswalk by 2 feet (easy to implement).	6.8	F	6.0	F	6.8	F

Source: AKRF, Inc.

The monitoring results will be compared to the No Action SFP and LOS as well as the *CEQR Technical Manual* thresholds described above to validate the need for, and design of, mitigations such as crosswalk restriping, movable obstruction relocation, and other improvements as necessary to ensure there will be no adverse effects. **Table 4E-4** also notes the relative ease of implementation of each recommended measure.

World Trade Center/Fulton Street

With implementation of the CBD Tolling Alternative, the west sidewalk of Broadway between Liberty and Cortlandt Streets during the AM and PM peak hours and the northwest corner of Broadway and Liberty Street during the PM peak hour would operate at LOS C or better. The northwest corner of Broadway and Liberty Street would operate at LOS D in the AM peak hour with a decrease of 1.9 SFP as compared to LOS C in the No Action Alternative. Based on the expected LOS and the *CEQR Technical Manual* adverse effects criteria, the CBD Tolling Alternative would not result in any adverse pedestrian effects at pedestrian elements near World Trade Center/Fulton Street.

4E.3 BICYCLES

4E.3.1 Methodology

Neither the New York State Environmental Quality Review Act nor the *CEQR Technical Manual* describe a methodology for quantitative capacity analysis of bicycle facilities or identification of adverse effects on bicycle facilities. Because the BPM is not capable of estimating new bicycle trips from the CBD Tolling Alternative, it was assumed that 2 percent of the AM and PM peak-hour Project-generated transit-to-walk trips to Manhattan CBD transit stations would be bicycle trips (reflecting the greatest concentration of potential new bicycle trips throughout the region). This distribution of bicycle mode share is based on the New York Metropolitan Transportation Council's *Hub Bound Travel Data Report 2019*, which presents data showing that 2 percent of all trips entering and leaving the Manhattan CBD on a typical weekday were made by bicycle. Using this assumption, a qualitative assessment of existing and future on-street bicycle facilities, including the expected increase in bicycle trips at Herald Square/Penn Station New York and World Trade Center/Fulton Street, was prepared. The qualitative assessment compares the inventory of existing and proposed bicycle facilities surrounding station areas that would generate the highest volume of bicycle trips from the Project to the estimated volume of peak-hour bicycle trips generated by the Project to determine the potential for adverse effects.

4E.3.2 Affected Environment

In recent years, New York City has expanded its bicycle network, including new bicycle lanes and upgrades to existing bicycle lanes. The network is well established within and around the Manhattan CBD. Figure 4E-3 shows the City of New York's bicycle map for the Manhattan CBD. NYCDOT plans to continue adding new bicycle lanes and enhancing existing ones throughout the city both in and outside the Manhattan CBD.

In the Manhattan CBD, several north–south avenues and many cross-streets have bicycle lanes that provide delineated bicycle travel adjacent to or separated from vehicular traffic. The bicycle network also connects to dedicated bicycle paths on the bridges to Brooklyn, Queens, and the Bronx, via the Staten Island Ferry to Staten Island, and across the George Washington Bridge to New Jersey. Encircling much of Manhattan, dedicated bikeways or shared-use paths extend through the length of most of Hudson River Park and the West Side Highway/Route 9A from the southern tip of Manhattan to the island's northern boundary with few gaps. Dedicated bikeways or shared-use paths also extend along much of the East Side along the East River waterfront.[7] North–south avenues (First, Second, Sixth, Seventh, Eighth, and Ninth Avenues) have bicycle lanes, and crosstown (east–west) bicycle lanes through the Manhattan CBD generally run in pairs on adjacent one-way streets, with small intervals between pairs.

[7] https://www1.nyc.gov/html/dot/downloads/pdf/nyc-bike-map-2021.pdf.

Figure 4E-3. Bicycle Routes in the Manhattan CBD

Source: NYCDOT and New York City Department of City Planning. May 2021. 2021 NYC Bike Map.

[Note: For an audio description, please go to the following link: https://www.youtube.com/watch?v=S2_sW9VNIK0&list=PLZHkn788ZQJPEY5zv-dr2gzkzMQFMgb_2&index=3.]

NYCDOT implemented bicycle infrastructure improvements in 2021 and has planned additional improvements in the near future. The CBD Tolling Alternative would not affect or prevent any of these planned improvements. The following recently implemented or planned pedestrian and bicycle improvements are within and near the Manhattan CBD:[8]

- Future conversion of Queensboro Bridge south and north outer roadways from a vehicular travel lane to pedestrian walkway and existing shared-use path to exclusive bike lane, respectively
- Conversion of a vehicular travel lane on the Brooklyn Bridge to a bicycle lane
- Creation of protected bicycle lane and parking along the following:
  - Columbus Avenue bicycle lane islands between West 59th Street and West 62nd Street
  - East 60th, East 61st, and East 62nd Streets between Fifth Avenue and York Avenue for Queensboro Bridge access
- Creation of bike lane adjacent to the median of Broadway from Columbus Circle to West 72nd Street

New York City has the nation's largest bicycle-sharing program—Citi Bike. People can rent bicycles at a kiosk or use a mobile app to pick up and return bicycles at any Citi Bike station. Approximately 1,300 Citi Bike stations with 20,000 bicycles are in New York City and approximately 260 Citi Bike stations with 6,000 bicycles are in the Manhattan CBD.[9] NYCDOT and Lyft (the operator of Citi Bike) plan to expand the system to serve additional neighborhoods by 2024. Citi Bike's Phase 3 plan will double the size of the Citi Bike service area and triple the number of shared bicycles.

4E.3.3 Environmental Consequences

NO ACTION ALTERNATIVE

In the No Action Alternative, there would not be a vehicular tolling program, and any changes in bicycling would likely result from background growth, improvements in cycling infrastructure and Citi Bike service, or new development in an area.

CBD TOLLING ALTERNATIVE

As described in Section 4E.2.1, the CBD Tolling Alternative would result in increases in peak-hour pedestrian volumes high enough to warrant detailed pedestrian analysis near the Herald Square/Penn Station New York and World Trade Center/Fulton Street transit hubs. Because expected higher bicycle use would be concentrated at transit hubs with the highest projected increases in pedestrian trips, these two areas have been assessed for bicycle effects. With up to 2,051 and 1,222 new pedestrian trips predicted in the peak hours, 41 and 24 new hourly bicycle trips would be generated by the Project at Herald Square/Penn Station New York and World Trade Center/Fulton Street, assuming a 2 percent bike share, respectively. Because there would be an average of fewer than one new bicycle trip per minute, these increases would be negligible compared to the magnitude of existing bicycle use adjacent to the two transit station complexes.

[8] NYCDOT, "Current Projects," https://www1.nyc.gov/html/dot/html/about/current-projects.shtml.
[9] CitiBike, https://www.citibikenyc.com/.

Outside the Manhattan CBD, the shift to bicycle use because of the CBD Tolling Alternative would not be substantial. It would be about 2 percent or less within New York City based on the assumptions above for stations within the Manhattan CBD. According to Long Island Rail Road and Metro-North Railroad data, less than 1 percent of commuters bike to their stations, Although the BPM cannot predict such activity, a small proportion of commuters would shift from automobiles to bicycles for their daily trips, depending on distance, available bicycle facilities, comfort, and other factors. Therefore, the total additional bicycle trips associated with the CBD Tolling Alternative would not result in any adverse effects on bicycle operations outside the Manhattan CBD.

4E.4 VEHICULAR AND PEDESTRIAN SAFETY

4E.4.1 Methodology

Pursuant to methodologies outlined in the *CEQR Technical Manual*, vehicular and pedestrian safety assessments were prepared for the same intersections for which detailed pedestrian analyses were conducted, adjacent to the areas of Herald Square/Penn Station New York and World Trade Center/Fulton Street. Crash data were obtained from NYCDOT for the most recent three-year period for which data are available (January 1, 2015, to December 31, 2017). The data quantify the total number of reportable crashes (defined as involving fatality, injury, or more than $1,000 in property damage), as well as a yearly breakdown of vehicular crashes with pedestrians and bicycles at each location.

Additionally, the curb pedestrian ramps at the corners selected for detailed analysis were assessed based on the Americans with Disabilities Act (ADA) regulations. The direction, location, and type of corner pedestrian ramps were evaluated to identify if the ramps meet minimum ADA compliance.

4E.4.2 Affected Environment

During the 2015–2017 period, the crash data reveals that 167 reportable crashes, consisting of 1 fatality, 116 injuries, and 63 pedestrian/bicyclist-related crashes occurred at the intersections in the areas of Herald Square/Penn Station New York and World Trade Center/Fulton Street. A rolling total of crash data[10] identifies three high-crash locations:

- West 34th Street at Eighth Avenue
- West 34th Street at Seventh Avenue
- West 34th Street at Sixth Avenue/Broadway

Each of these intersections experience high pedestrian volumes throughout the day.

To assess minimum ADA compliance of curb pedestrian ramps in the affected environment, observations were conducted using street view images captured in July and August 2021. At the northwest, northeast,

[10] As described in **Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses,"** high-crash locations are defined as locations where 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes occurred in any consecutive 12 months of the most recent three-year period for which data are available. NYCDOT crash data does not contain non-reportable crashes, which make up a negligible portion of intersection crashes, because nearly all involve property damage exceeding $1,000 or an injury or fatality.

and southwest corners of Eighth Avenue and West 34th Street, northeast corners of Sixth Avenue and West 34th Street and Seventh Avenue and West 32nd Street, and northwest corner of Broadway and Liberty Street, none of the curb pedestrian ramps meet minimum ADA compliance. Additional information is provided in **Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses."** NYCDOT has an ongoing Pedestrian Ramp Program,[11] which is dedicated to upgrading and installing pedestrian ramps throughout New York City.

Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses," shows the total crash characteristics by intersection, as well as a breakdown of pedestrian and bicycle crashes by year and location. For the three high-crash locations, an examination of each pedestrian/bicyclist-related incident was conducted, along with a field audit of each intersection's geometric and operational conditions. These efforts, as detailed in **Appendix 4E, "Transportation: Supporting Documentation for Pedestrian Analyses,"** showed that causes for the recorded crashes vary and are mostly attributed to inattentiveness of and failure to yield—by motorists but also by pedestrians and bicyclists. As part of the City of New York's Vision Zero[12] initiative, many additional safety measures have been added to roadways and intersections across New York City.

4E.4.3 Environmental Consequences

NO ACTION ALTERNATIVE

In the No Action Alternative, there would not be a vehicular tolling program, and any changes in safety conditions at high-crash intersections or non-compliant ADA curb pedestrian ramps would likely result from changes in activity resulting from background growth or new development in an area.

CBD TOLLING ALTERNATIVE

The CBD Tolling Alternative would result in slight increases in pedestrian volumes at the three identified high-crash locations. The Project would not exacerbate safety concerns at the locations, which already experience high pedestrian volumes throughout the day. The CBD Tolling Alternative would also not result in substantial increases in pedestrian volumes or exacerbate safety concerns at other locations in the Manhattan CBD that do not already experience high pedestrian volumes throughout the day. Three locations near Herald Square could realize a degradation in the LOS because of the CBD Tolling Alternative, but the widening of a sidewalk through the removal of sidewalk obstructions and the widening of two crosswalks will address this potential degradation in the LOS. The CBD Tolling Alternative would not result in substantially modified geometric or operational traffic, pedestrian, or bicycle conditions, with or without recommended improvement measures, which would therefore not exacerbate safety concerns. Also, because of fewer vehicular trips entering and exiting the Manhattan CBD, the CBD Tolling Alternative could result in reduced traffic volumes at these locations. This would help to reduce vehicle-vehicle and vehicle-pedestrian conflicts, leading to an overall benefit to safety. Therefore, the CBD Tolling Alternative would not result in any adverse effects on vehicular, pedestrian, and bicycle safety, and mitigation measures to address vehicular, pedestrian, and bicycle safety are not necessary.

[11] https://www1.nyc.gov/html/dot/html/pedestrians/pedramps.shtml.
[12] https://www1.nyc.gov/content/visionzero/pages/.

4E.5 CONCLUSION

Using methodology presented in the *CEQR Technical Manual*, a detailed assessment of increases in pedestrian activity was warranted for areas around the Herald Square/Penn Station New York and World Trade Center/Fulton Street transit hubs in Manhattan.

- Herald Square/Penn Station New York in Midtown Manhattan where Penn Station New York (Amtrak and commuter rail), three subway stations serving multiple subway routes, a Port Authority Trans-Hudson (PATH) station, and commuter and local bus routes are located

- World Trade Center/Fulton Street in Lower Manhattan where a PATH station, multiple subway stations serving multiple subway routes, and local bus routes are located

Based on detailed analysis of the pedestrian elements at these locations that would experience more than 200 new peak-hour trips, there would be no adverse effect on pedestrian circulation except at three locations in the Harold Square/Penn Station study area. These effects would occur at two crosswalks on one sidewalk, and they will be mitigated with measures that are routinely implemented throughout the city. The Project Sponsors will monitor the affected locations before and after completion of the Project to validate the analysis results and will implement the necessary mitigation to alleviate adverse effects.

The bicycle network is well established within and around the Manhattan CBD, and additional bicycle trips generated by the Project would be negligible compared to the magnitude of existing bicycle use adjacent to transit station complexes. Therefore, the CBD Tolling Alternative would not result in any adverse effects on bicycle operations.

The CBD Tolling Alternative would not exacerbate safety concerns at the three identified high-crash locations within the study area, nor would it exacerbate safety concerns at other locations within or outside the Manhattan CBD that do not already experience high pedestrian volumes throughout the day. The CBD Tolling Alternative would not result in substantially modified geometric or operational traffic, pedestrian, or bicycle conditions that would exacerbate safety concerns. Because fewer vehicular trips would be entering and exiting the Manhattan CBD, the CBD Tolling Alternative could result in reduced traffic volumes at these locations, which could reduce vehicle-vehicle and vehicle-pedestrian conflicts, leading to an overall increase in safety.

Table 4E-5 summarizes the effects of the CBD Tolling Alternative on pedestrians and bicycles*[, and Table 4E-6 summarizes how mitigation measures will be implemented by the Project Sponsors]*.

Table 4E-5. Summary of Effects of the CBD Tolling Alternative on Pedestrians and Bicycles

TOPIC	SUMMARY OF EFFECTS	EFFECT FOR ALL TOLLING SCENARIOS	POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
Pedestrian Circulation	Increased pedestrian activity on sidewalks outside transit hubs because of increased transit use. At all but one location in the Manhattan CBD (Herald Square/Penn Station), the increase in transit riders would not generate enough new pedestrians to adversely affect pedestrian circulation in the station area. Outside the Manhattan CBD, transit usage at individual stations would not increase enough to adversely affect pedestrian conditions on nearby sidewalks, crosswalks, or corners.	Adverse effects on pedestrian circulation at one sidewalk segment and two crosswalks	Yes	**Mitigation needed.** ***[NYCDOT]*** will implement a monitoring plan at this location. The plan will include a baseline, specific timing, and a threshold for additional action. If that threshold is reached, ***[NYCDOT]*** will increase pedestrian space on sidewalks and crosswalks via physical widening and/or removing or relocating obstructions.
Bicycles	Small increases in bicycle trips near transit hubs and as a travel mode, both inside and outside the Manhattan CBD	Small increases in bicycle trips near transit hubs with highest increases in pedestrian trip share; some shifts from automobiles to bicycles	No	**No mitigation needed**. No adverse effects
Safety	No adverse effects	No substantial increases in pedestrian volumes or increased safety concerns, including at existing identified high-crash locations. Overall, fewer vehicular trips entering and exiting the Manhattan CBD, the CBD Tolling Alternative could result in reduced traffic volumes at these locations. This would help to reduce vehicle-vehicle and vehicle-pedestrian conflicts, leading to an overall benefit to safety.	No	**No mitigation needed.** No adverse effects

[Table 4E-6. Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Pedestrians and Bicycles]

RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
Herald Square/Penn Station NY	NYCDOT will implement a monitoring plan at this location. The plan will include a baseline, specific timing, and a threshold for additional action. If that threshold is reached, NYCDOT will increase pedestrian space on sidewalks and crosswalks via physical widening and/or removing or relocating obstructions.	Exact timing will be based on seasonality and other factors such as construction activity. Baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation.	An additional 221 pedestrians per hour (pph) during the weekday AM peak hour or 204 pph during the PM peak hour along the west sidewalk of Eighth Avenue between West 34th and West 35th Streets, 265 pph during the AM peak hour or 259 pph during the PM peak hour on the north crosswalk at Sixth Avenue and West 34th Street, and/or 221 pph during the AM peak hour on the north crosswalk at Seventh Avenue and West 32nd Street. The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the *CEQR Technical Manual* and will be coordinated with NYCDOT.	Within 90 days of observing pedestrian counts in excess of the threshold for next steps.	NYCDOT will lead.

5. Social Conditions

This chapter provides an overview of social conditions for the New York City region, the Manhattan CBD, and the neighborhoods where implementation of the CBD Tolling Alternative would have potential environmental consequences related to population characteristics and community cohesion, neighborhood character, and current public policy. This chapter relies on data from **Chapter 4, "Transportation,"** to evaluate the effects of predicted changes in travel behavior resulting from the CBD Tolling Alternative on social conditions.

To present the wide range of topics related to social conditions, the chapter is broken into three subchapters:

- Subchapter 5A, **"Social Conditions: Population Characteristics and Community Cohesion"**
- Subchapter 5B, **"Social Conditions: Neighborhood Character"**
- Subchapter 5C, **"Social Conditions: Public Policy"**

This and other chapters of this EA (in particular **Chapters 2, 3, 6, 15, 17, and Subchapters 4A, 4B,** 4C, **4E, 5B, and** 5C) collectively provide information relevant to FHWA's guidance for a Community Impact Assessment.[1] The information is presented in this EA rather than in a stand-alone Community Impact Assessment report, and **Appendix 5A, "Social Conditions: Community Impact Assessment Summary Matrix,"** presents a matrix showing the elements of a Community Impact Assessment and where they can be found in this EA.

[1] FHWA. 2018 Update. FHWA-PD-96-036. *Community Impact Assessment: A Quick Reference for Transportation*. www.fhwa.dot.gov/livability/cia/quick_reference/ciaguide_053118.pdf.

5A. Population Characteristics and Community Cohesion

5A.1 INTRODUCTION

This subchapter assesses whether changes to population characteristics or travel patterns resulting from implementation of the CBD Tolling Alternative would affect community cohesion, community facilities and services, and access to employment. It also evaluates the effects of the CBD Tolling Alternative on certain vulnerable social groups, including elderly populations, persons with disabilities, transit-dependent populations, and nondriver populations. Chapter 17, "Environmental Justice," presents an evaluation of the Project's effects on low-income and minority populations and an analysis of whether the Project would result in disproportionately high and adverse effects on minority and low-income populations in accordance with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations."

5A.2 METHODOLOGY

5A.2.1 Analysis Framework

FHWA's Technical Advisory T6640.8A provides guidance on the content of environmental documents prepared pursuant to NEPA and FHWA's procedures that implement NEPA.[2] In addition, FHWA's *Community Impact Assessment: A Quick Reference for Transportation* (Community Impact Assessment guidance) provides information on how to conduct a Community Impact Assessment and guidance on analyzing community impacts for transportation actions.[3] The Project Sponsors followed the guidance in these documents in preparing the analysis in this chapter. FHWA's Technical Advisory T6640.8A identifies categories of resources that project sponsors should consider when assessing the environmental consequences of their undertakings, and the Community Impact Assessment guidance identifies types of community impacts to consider.

Consistent with FHWA Technical Advisory T66040.8A and the FHWA Community Impact Assessment guidance, this subchapter provides an overview of key population characteristics in the New York City region and evaluates potential effects on community cohesion, community facilities and services, certain social groups, and access to employment.

Community cohesion is the degree to which groups of people with shared attributes or affinities—such as cultural, religious, artistic, or activity-based communities—can form and maintain communities that are not limited to any particular location or neighborhood. Community cohesion is usually expressed as a "sense of belonging" or a level of commitment to a community, or a strong attachment to neighbors,

[2] FHWA. October 30, 1987. FHWA Technical Advisory T6640.8A, "Guidance for Preparing and Processing Environmental and Section 4(f) Documents." www.environment.fhwa.dot.gov/legislation/nepa/guidance_preparing_env_documents.aspx#aa.

[3] FHWA. 2018 Update. FHWA-PD-96-036. *Community Impact Assessment: A Quick Reference for Transportation*. www.fhwa.dot.gov/livability/cia/quick_reference/ciaguide_053118.pdf.

groups, and institutions, usually because of continued appreciation over time. FHWA Technical Advisory T66040.8A defines potential effects on community cohesion as, "[c]hanges in the neighborhoods or community cohesion for the various social groups as a result of the proposed action. These changes may be beneficial or adverse, and may include splitting neighborhoods, isolating a portion of a neighborhood or an ethnic group, generating new development, changing property values, or separating residents from community facilities, etc."[4] In addition, the FHWA Community Impact Assessment guidance identifies types of community impacts, including displacement of residents and adverse effects on public facilities. As such, this subchapter also considers Project effects related to the potential for residential displacement and effects on community facilities and services—such as public or publicly funded schools, libraries, childcare centers, health care facilities, and fire and police protection.

Consistent with FHWA Technical Advisory T66040.8A, this subchapter also addresses potential effects on certain social groups, such as elderly populations, persons with disabilities, transit-dependent populations (those who use transit as their primary mode for some or all trips, irrespective of vehicle ownership), and nondriver populations. Changes in travel patterns and accessibility can affect these population sub-groups as they may rely on certain modes of transportation or certain accessibility patterns.

5A.2.2 Study Area

The analysis of social conditions in this subchapter considers potential effects of the No Action Alternative and CBD Tolling Alternative on the 28-county region and the Manhattan CBD. The 28-county regional study is shown in **Figure 5A-1** and described in **Chapter 3, "Environmental Analysis Framework."** It includes New York City and the surrounding region, which represents the primary catchment area for trips to and from the Manhattan CBD.

5A.2.3 Data Sources

Unless otherwise noted, information on population characteristics is based on the U.S. Census Bureau's 2015–2019 American Community Survey (ACS) 5-Year Estimates. The evaluation of the Project's effects on these population characteristics is based on the results of comprehensive regional transportation modeling conducted for the Project as described in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling."**

[4] FHWA. October 30, 1987. FHWA Technical Advisory T6640.8A, "Guidance for Preparing and Processing Environmental and Section 4(f) Documents." www.environment.fhwa.dot.gov/legislation/nepa/guidance_preparing_env_documents.aspx#aa.

5A.3 AFFECTED ENVIRONMENT

5A.3.1 Regional Context

The New York City metropolitan region is a very large and diverse area of some 12,500 square miles and a regional population of about 22.2 million residents. New York City is the center of the regional study area, which includes portions of three states—New York, New Jersey, and Connecticut—and is home to approximately 22.2 million residents according to the 2015–2019 ACS. Figure 5A-1 shows the regional study area, with the five counties of New York City at the center, two counties to the east on Long Island, seven counties to the north of New York City in New York and Connecticut, and 14 counties to the west and south in New Jersey. The study area extends approximately 170 miles from east to west and approximately 175 miles from north to south. The region reflects a high level of social and economic diversity and its development patterns range from dense urban core areas in and around New York City to lower density suburban communities and low-density exurban areas.

The regional study area has a wide range of population densities, land uses, and development densities reflecting the long history of settlement patterns, the regional transportation network, and the location of the region's cities, communities, and neighborhoods. Other than large tracts of open space or lands owned by the State or Federal government, there are no unincorporated areas and there are more than 700 incorporated municipalities (boroughs, villages, towns, and cities) within the 28 counties of the regional study area. These incorporated municipalities range from small boroughs and villages—often with fewer than 5,000 residents, larger townships and towns, subregional urban areas, and cities. Large or small, these communities generally provide for essential community facilities and services and maintain their own planning, zoning, and development controls that define the character of the community. New York City is the urban center with its 8.4 million residents and, after New York City, the next largest city in the region is Newark in Essex County, New Jersey, with a population of approximately 281,000, followed by Jersey City in Hudson County, New Jersey, and Yonkers in Westchester County, New York, with populations of 262,000 and 200,000, respectively.

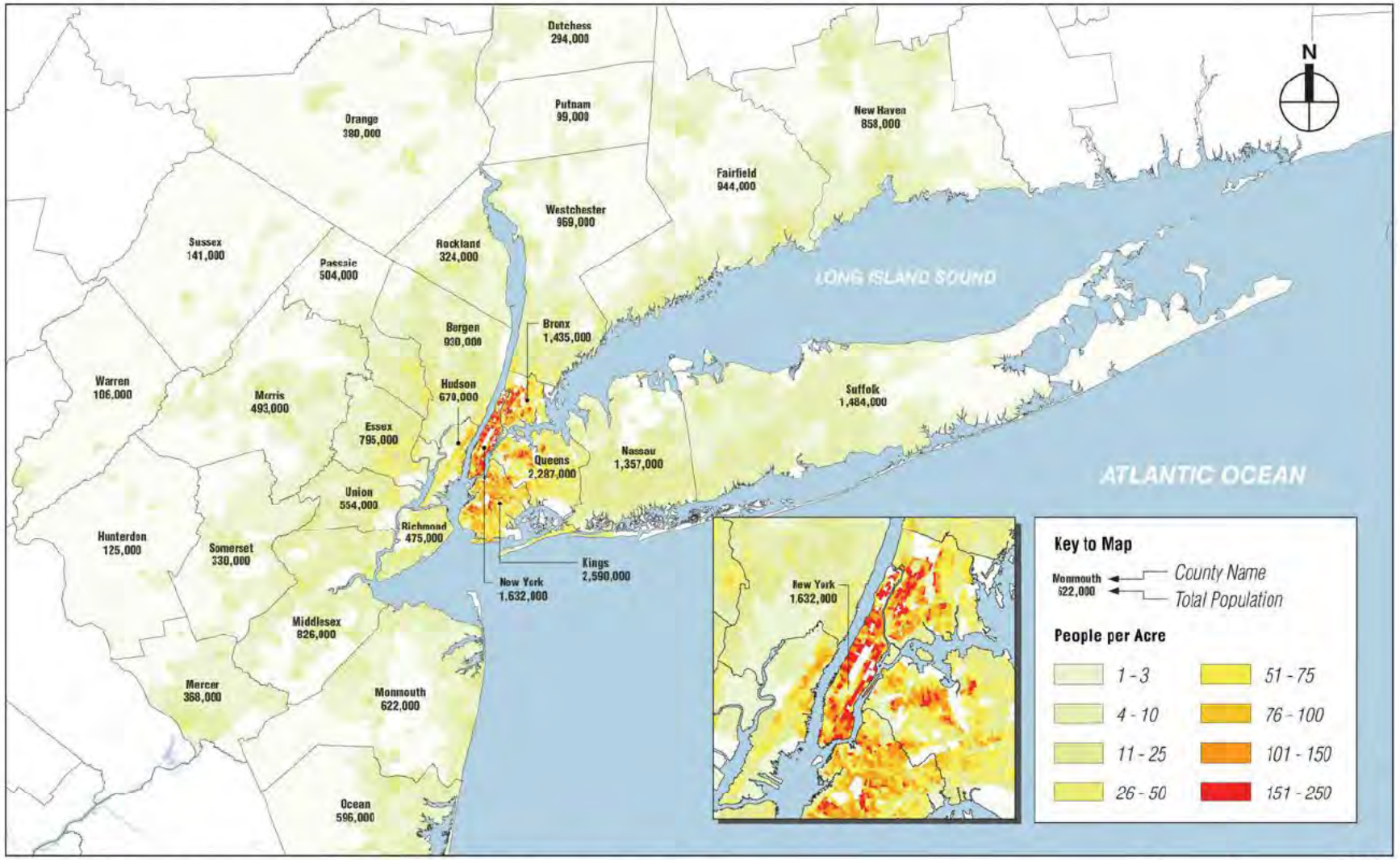
New York City is the most densely populated city in the United States.[5] As shown in Figure 5A-2, four of its five boroughs (counties)—the Bronx, Brooklyn, Manhattan, and Queens—are densely populated; in addition, the adjacent county across the Hudson River in New Jersey, Hudson County, is also densely populated. Other counties in the regional study area are more suburban in character, and density decreases at greater distance from New York City. New York City's population of 8.4 million people is approximately 38 percent of the regional population and yet its combined land area of 423 square miles represents only about 3.4 percent of the total land area of the region. The 28-county region is a mature metropolitan region with a long history of development patterns that are reflected in its transportation network and its population distribution.

[5] New York City Department of City Planning. www1.nyc.gov/site/planning/planning-level/nyc-population/newest-new-yorkers-2013.page.

Figure 5A-1. Regional Study Area

Source: ArcGIS Online, https://www.arcgis.com/index.html.

Figure 5A-2. Population and Density



Source: U.S. Census Bureau. American Community Survey 5-Year Estimates, 2015–2019.

[Note: For an audio description, please go to the following link: https://www.youtube.com/watch?v=rO8TIuBPBBA&list=PLZHkn788ZQJPEY5zv-dr2gzkzMQFMgb_2&index=4.]

The region has a dense transportation network of highways and public transportation, including commuter rail, subway, light rail, buses, and ferries. Because New York City, and particularly Manhattan, has long been the economic center of the region, the transportation network is predominantly oriented to providing connections to and from Manhattan and New York City overall. Transportation links to Manhattan include the roads and highways that lead to and from the tunnels and bridges linking Manhattan to the region. The historic transportation patterns are most notable in the legacy infrastructure of fixed transportation routes (railroads, subways, and ferries) that connect the region to the city, and all five boroughs of New York City to the Manhattan CBD. The level of density in the urban core is reflected in the extensive transit network, frequent service throughout the region, and 24-hour service on the New York City subway and bus system. As depicted on Figure 5A-3, nearly all areas of New York City are within a half-mile of subway, commuter rail, Select Bus Service (SBS), or express bus service. One-half mile represents an approximately 10-minute walk for an average pedestrian, and therefore indicates the availability of these transportation services. In addition, New York City has a very dense local bus network, and all areas of the city are within a half-mile of a local bus stop other than one neighborhood in Queens (Breezy Point, a gated community in southern Queens). As discussed in Section 5A.3.4, most people use public transportation to travel to and from the Manhattan CBD.

Farther from New York City, the suburban and exurban areas of the regional study area have commuter rail and bus service that lead to New York City, with towns centered around commuter rail stations, but also include a more decentralized road network serving the greater region that developed as the region grew with a more auto-oriented development pattern. The highway network includes roads that do not connect to New York City at all as well as circumferential highways such as I-95, I-287, and I-84 that pass through New York City but largely bypass the Manhattan CBD. The expansion of the larger and decentralized highway network but the limited roadway capacity of the historic links to, from, and within Manhattan is reflected in the chronic congestion in Manhattan as described in Chapter 1, "Introduction."

At the hub of the regional study area, the Manhattan CBD is the traditional economic center of the region. It extends almost 5 miles from the tip of Lower Manhattan on the south to 60th Street on the north, and approximately 2 miles from the Hudson River on the west to the East River on the east. The Manhattan CBD includes the densely developed commercial areas of Lower Manhattan and Midtown Manhattan as well as residential neighborhoods within and around these business-oriented areas. Subchapter 5B, "Social Conditions: Neighborhood Character," provides more detailed discussion of the neighborhoods and geographic areas of the Manhattan CBD.

Other areas of New York City are connected to the Manhattan CBD through the city's extensive transit system, which carries 85 percent of daily commuter trips to and from the Manhattan CBD, as well as by bridges and tunnels connecting the road and highway network to Manhattan. One of the city's five boroughs, Staten Island, is more geographically isolated from the rest of New York City, and is connected by highway bridges to Brooklyn and New Jersey (which carry express buses between Staten Island and Manhattan) and is linked to Manhattan by the iconic Staten Island Ferry. Staten Island is more suburban in character than other parts of New York City with less racial and ethnic diversity than the rest of New York City, and a housing stock with lower density.

Figure 5A-3. New York City Areas Within and Beyond One-Half Mile of Rail Stations, Subway Stations, or Express Bus and Select Bus Service Stops

Source: U.S. Census Bureau. Census Transportation Planning Package (CTPP), 2012–2016 Estimate.

5A.3.2 Community Cohesion

Community cohesion is the degree to which groups of people with shared attributes or affinities—such as cultural, religious, artistic, or activity-based communities—can form and maintain communities that are not limited to any particular location or neighborhood. Community cohesion and civic life in the regional study area are organized around neighborhoods and communities, including the 700 communities that surround New York City and the hundreds of neighborhoods within New York City that reflect the diversity of the city's population. The regional study area has a wide range of geographic, cultural, religious, artistic, and activity-based communities spread throughout the region, with varying levels of economic, social, and cultural ties to the Manhattan CBD. As distances increase from the Manhattan CBD, fewer residents have direct and daily interactions with the Manhattan CBD, as evidenced by the smaller numbers and proportions of daily commuters to the Manhattan CBD (discussed in Section 5A.3.4).

The region's transportation network, including its roadways, sidewalks, and public transportation services, is essential to connecting the communities that define the region, allowing the mobility to access its urban centers, centers of government, cultural institutions, and, most importantly, places of employment. This is particularly true for the Manhattan CBD, which has large share of the region's jobs. As described in more detail in Chapter 6, "Economic Conditions," a meaningful connection to the Manhattan CBD for many people is that it is their place of work. The scale of the social connections in the region and the transportation demands to maintain those connections are immense. According to the 2010/2011 Regional Household Travel Survey, there are approximately 80 million individual trips in the region on an average weekday. Approximately one-third of all daily trips are made for social/recreational purposes, shopping, or school, and approximately one-quarter of all daily trips are for work purposes.[6]

There are thousands of places of worship for many different religions throughout the region, and these remain important local neighborhood anchors not particularly tied to or dependent on regional mobility. In and around the Manhattan CBD, there are similarly dispersed neighborhood places of worship as well as important regional institutions that draw local and regional visitors as well as tourists and visitors from outside the region. Some notable examples include St. Patrick's Cathedral, Trinity Church, Central Synagogue, Othman bin Affan Masjid (Islamic Society of Mid Manhattan), St. Vartan Armenian Cathedral, the Mahayana Buddhist Temple, and many others.[7] In total, the Manhattan CBD has approximately 200 places of worship.[8] Places of worship typically are accessible by transit, and most do not have on-site visitor parking given the densely developed nature of the Manhattan CBD, which indicates that travel by vehicle is not the predominant mode of transportation for their worshippers.

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6 Trip purpose categories included "Work," "School," Social/Recreational," "Shopping," and "Other;" more detailed options comprising "Other" included "Personal Business," "Home to Serving Passengers/Serving Passengers to Home," and "Other." New York Metropolitan Transportation Council and New Jersey Transportation Planning Authority. October 2014. 2010/2011 Regional Household Travel Survey. www.nymtc.org/portals/0/pdf/RHTS/RHTS_FinalExecSummary10.6.2014.pdf.

7 The U.S. Census Bureau does not collect data on religious affiliation in its demographic surveys or decennial census; therefore, data on the population of different religious affiliations in the Manhattan CBD is not available from the census.

8 Based on a review of ArcGIS Online, https://www.arcgis.com/index.html, in combination with Google maps.no com.

5A.3.3 Community Facilities and Services

Community facilities include schools, libraries, childcare centers, health care facilities, and police and fire protection. Throughout the region, most community facilities are locally focused, serving their individual communities, although some have a larger regional draw. Other facilities, such as homeless shelters, food pantries and meal distribution services, jails, community centers, colleges and universities, and religious and cultural facilities, are also community facilities and services and these serve a broader regional need.

5A.3.3.1 LIBRARIES

There are some 200 branch libraries in New York City and hundreds more in individual communities in the region. The region includes some major, central libraries, such as the main library of the New York Public Library system within the Manhattan CBD and the main library of the Brooklyn Public Library system outside the Manhattan CBD, as well as many smaller libraries throughout the region. The regional libraries, like other large cultural institutions with a regional draw, attract visitors with specific needs (i.e., research projects or other specialized tasks).

5A.3.3.2 SCHOOLS

Similarly, schools are decentralized and located throughout the city and region, serving their local communities. In New York City, the New York City Department of Education (NYCDOE) provides transportation to all eligible New York City students in public, charter, and non-public schools. NYCDOE transportation services vary by school and each child's eligibility for those services. In general, NYCDOE provides student MetroCards for students living more than one-half mile from their school, and may provide yellow school bus service, depending on the age of the student, distance to school, and the student's disability status.[9] Many students, especially those in Manhattan where school catchment zones are small given the population density, walk or take transit to school.

The Manhattan CBD includes approximately 125 public schools serving some 60,000 students, as well as charter schools and private and parochial schools. Based on recent surveys conducted by the NYCDOE, approximately 8 percent of the public school students who live within the Manhattan CBD use school buses to get to school; the rest use public transit, walk, or bicycle to school.

5A.3.3.3 MEDICAL FACILITIES

Like other services in a community, health clinics, urgent care, doctors' offices, and community hospitals are present throughout the regional study area and typically serve their local communities. The 28-county study area also has healthcare facilities, including specialists and hospitals, with a larger, regional (and, in some cases, national and international) draw because of the specialty services they provide. Some of these are within the Manhattan CBD and others are outside. For example, specialty hospitals and associated doctors' offices are located throughout Manhattan, including within the Manhattan CBD on the east side

[9] MetroCard is the primary payment method for the New York City subway and New York City and MTA buses. Student MetroCards are distributed by schools to students whose home is one-half mile or farther from their school. These MetroCards allow three free rides each school day between 5:30 a.m. and 8:30 p.m., including free transfers between buses or between the subway and local, limited, and SBS buses.

between East 14th and East 34th Street and outside the Manhattan CBD on the Upper East Side (generally between East 68th and East 106th Streets).

Some people may travel by vehicle from locations outside the Manhattan CBD or by vehicle within the Manhattan CBD to access these facilities. In addition, some residents of the Manhattan CBD may travel by vehicle to access medical facilities outside the Manhattan CBD.

The rate of vehicle use to access medical facilities depends in part on the facilities' distance to a subway station or bus route (as well as other factors, including the patient's mobility and the type of medical service sought). For medical office uses within one-quarter mile of a subway station, approximately 6 percent of trips to these uses are by auto or taxi/FHV modes, according to data from NYCDOT's mode choice surveys. For medical office uses that are beyond one-quarter mile from a subway station, approximately 14 percent of trips are by auto or taxi/FHV modes. Therefore, most medical trips, even those to facilities more than one-quarter mile from a subway station, are made by modes other than auto or taxi/FHV. Several major medical facilities in Manhattan are more than one-quarter mile from a subway station, including New York University Langone Medical Center, the Veterans' Administration New York Harbor Healthcare System, and Bellevue Hospital Center in the Manhattan CBD.

5A.3.3.4 OTHER FACILITIES

Other facilities, such as homeless shelters, food pantries and meal distribution services, jails, community centers, colleges and universities, and religious and cultural facilities, are also community facilities and services. These serve both a local and a broader regional need.

5A.3.4 Population Characteristics and Protected Social Groups

This section summarizes key population characteristics in the regional study area and identifies social groups that are the focus of this analysis: elderly populations, persons with disabilities, transit-dependent populations (those who use transit as their primary mode for some or all trips, irrespective of vehicle ownership), and nondriver populations.

The 28-county regional study area has approximately 22.2 million residents. As shown in Figure 5A-2 and detailed in Table 5A-1, approximately 38 percent of these residents live in New York City; and almost 20 percent in the four closest New Jersey counties (Bergen, Essex, Hudson, and Union) and Nassau County, just east of New York City.

The population of the regional study area has grown by 5 percent since 2000, with New York City adding more than 410,000 people and accounting for 37 percent of that growth. Brooklyn saw the largest population gain in the region, with almost 126,000, followed by the Bronx (102,000), and Manhattan (95,000). Population projections prepared by the New York Metropolitan Transportation Council (NYMTC), the regional Metropolitan Planning Organization (MPO) for the New York City region, projects continued

growth in the region, with the population projected to exceed 25 million by 2045. New York City's population is projected to surpass 9 million by 2045.[10]

Table 5A-1. Population Characteristics of the Regional Study Area

GEOGRAPHIC AREAS	TOTAL POPULATION	% MINORITY	% LOW-INCOME	% AGE 65 AND OLDER	% WITH AMBULATORY DIFFICULTY	% HOUSEHOLDS WITH NO ACCESS TO A VEHICLE
New York City	**8,419,316**	**67.9%**	**36.0%**	**14.5%**	**7.0%**	**54.6%**
Bronx County	1,435,068	90.9%	51.0%	12.5%	9.5%	59.1%
Kings County (Brooklyn)	2,589,974	63.6%	39.1%	13.6%	7.0%	55.8%
New York County (Manhattan)	1,631,993	53.1%	28.9%	16.2%	6.5%	77.0%
Queens County	2,287,388	75.0%	31.0%	15.3%	6.2%	36.7%
Richmond County (Staten Island)	474,893	39.0%	23.0%	16.0%	6.2%	16.7%
Long Island Counties	**2,840,341**	**36.1%**	**15.6%**	**17.0%**	**5.1%**	**6.0%**
Nassau County	1,356,509	40.0%	14.5%	17.5%	4.7%	6.9%
Suffolk County	1,483,832	32.4%	16.7%	16.5%	5.2%	5.2%
New York Counties North of New York City	**2,065,938**	**39.3%**	**22.3%**	**16.0%**	**5.7%**	**11.7%**
Dutchess County	293,754	28.5%	21.4%	17.1%	6.7%	7.8%
Orange County	380,085	35.8%	25.8%	13.7%	6.7%	9.8%
Putnam County	98,787	21.3%	12.7%	16.8%	5.4%	4.9%
Rockland County	324,422	36.9%	28.3%	15.6%	4.8%	10.7%
Westchester County	968,890	46.5%	20.2%	16.7%	5.3%	14.5%
New Jersey Counties	**7,060,811**	**46.8%**	**22.5%**	**15.7%**	**5.5%**	**12.3%**
Bergen County	930,390	43.4%	16.1%	17.0%	4.6%	8.3%
Essex County	795,404	69.5%	33.3%	13.5%	6.5%	22.4%
Hudson County	670,046	71.2%	32.8%	11.8%	5.8%	32.6%
Hunterdon County	124,823	14.5%	10.7%	17.9%	3.7%	3.4%
Mercer County	367,922	50.3%	25.0%	15.0%	5.5%	11.2%
Middlesex County	825,920	56.9%	19.4%	14.7%	5.4%	8.0%
Monmouth County	621,659	24.8%	16.3%	17.2%	5.9%	6.9%
Morris County	493,379	28.6%	12.4%	16.8%	4.5%	4.7%
Ocean County	596,415	15.3%	24.8%	22.5%	7.6%	6.3%
Passaic County	503,637	58.7%	32.8%	14.3%	5.1%	16.6%
Somerset County	329,838	43.7%	12.1%	15.3%	4.1%	4.9%
Sussex County	141,483	13.7%	13.6%	16.7%	5.7%	3.5%
Union County	554,033	60.5%	24.8%	14.2%	5.1%	11.8%
Warren County	105,862	18.3%	19.1%	17.6%	6.9%	6.4%
Connecticut Counties	**1,801,439**	**37.7%**	**23.1%**	**16.2%**	**5.5%**	**9.6%**
Fairfield County	943,926	38.3%	20.8%	15.6%	5.1%	7.8%
New Haven County	857,513	37.1%	25.6%	17.0%	6.2%	11.6%
TOTAL	**22,187,845**	**52.0%**	**26.8%**	**15.4%**	**6.0%**	**27.9%**

Source: U.S. Census Bureau, American Community Survey (ACS) 2015–2019 5-Year Estimates.
Note: Low-income residents are those with household incomes of up to 1.99 times the Federal poverty level.

[10] New York Metropolitan Transportation Council. 2015. 2050 Socioeconomic and Demographic Forecasts. www.nymtc.org/DATA-AND-MODELING/SED-Forecasts/2050-Forecasts.

According to the U.S. Census Bureau 2015–2019 ACS 5-Year Estimates, 52 percent of the regional study area's population is minority. Some 67.9 percent of New York City's population identifies as minority and 53.7 percent of the combined residents of the four closest New Jersey counties (Bergen, Essex, Hudson, and Union) and Nassau County are minority. An estimated 26.8 percent of the population in the regional study area have a household income that can be considered low-income.[11] In New York City as a whole, approximately 36.0 percent of the population is low-income and 22.4 percent of the combined population in the four closest New Jersey counties and Nassau County is low-income. Overall, in the New York counties north of New York City, Long Island, and the portions of New Jersey and Connecticut outside of New York City that comprise the remainder of the regional study area, the proportion of minority residents ranges from 13.7 percent to 69.5 percent, with the lowest numbers in the less densely populated New Jersey counties farthest from New York City. Approximately 10.7 percent to 33.3 percent of the population of the counties outside New York City is low-income. **Appendix 5B, "Social Conditions: Supplemental Demographic Information for the Regional Study Area and Manhattan CBD,"** and **Chapter 17, "Environmental Justice,"** provide additional demographic information regarding minority status and income characteristics for the Manhattan CBD and regional study area, respectively.

In the regional study area, approximately 10 percent of the noninstitutionalized population has a disability and approximately 6 percent of the noninstitutionalized population age 5 and older is disabled with ambulatory difficulty.[12] The counties with the highest percentages of population with ambulatory difficulty are Bronx County at 9.5 percent (compared to 6.4 percent in New York State overall) and Ocean County at 7.6 percent (compared to 5.5 percent in New Jersey overall).

About 15 percent of the population in the regional study area is 65 years old or older, representing a 29 percent increase in this age group since the year 2000. Throughout the regional study area, approximately 12 percent to 23 percent of each county's population is 65 years or older; Ocean County, New Jersey, has the highest percentage of elderly residents at 23 percent. Across the regional study area, approximately 22 percent of the population is youth (age 0 to 17) and approximately 63 percent is working age (age 18 to 64).

Roughly 28 percent of households in the regional study area do not have a vehicle available for their use (and, conversely, 72 percent of households have one or more vehicles available), although vehicle access varies widely across the region, as shown in **Table 5A-1** and **Figure 5A-4**.[13] As would be expected given the urban densities of New York City, the proportion of households that do not have access to a vehicle is substantially higher in Manhattan (77 percent in the county as a whole, 80 percent in the Manhattan CBD),

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11 As described in **Chapter 17, "Environmental Justice,"** low-income residents are those with household incomes of up to 1.99 times the Federal poverty level.

12 This census category is defined as "having serious difficulty walking or climbing stairs." This community may depend on vehicular transportation and would have challenges switching to public transit.

13 This discussion relies on data on "Vehicles Available" from the 2015-2019 ACS. These data show the number of passenger cars, vans, and pickup or panel trucks of one-ton (2,000 pounds) capacity or less kept at home and available for the use of household members. Vehicles rented or leased for one month or more, company vehicles, and police and government vehicles are included if kept at home and used for nonbusiness purposes. Motorcycles or other recreational vehicles are excluded. Dismantled or immobile vehicles are excluded. Vehicles kept at home but used only for business purposes also are excluded.

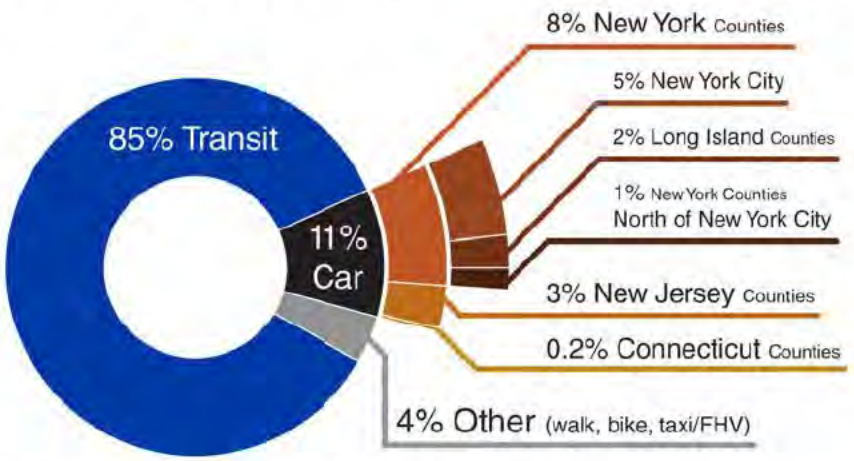
the Bronx (59 percent), and Brooklyn (56 percent), than in the region (28 percent). These households without access to a vehicle are part of the region's transit-dependent population. Vehicle access generally increases with income,[14] resulting in a greater number of all auto trips being made by those reporting a higher income than by households that reported a lower income.[15]

As shown in **Figure 5A-5** (on the following page), the percentage of households with no access to a vehicle generally decreases with distance from the Manhattan CBD. While some counties just outside New York City have vehicle access rates similar to those of New York City counties, these adjacent counties typically have a much lower share of commuters to the Manhattan CBD. For example, Hudson County in New Jersey has an auto ownership rate similar to that of Queens, but it contributes only 5 percent of the commuters to the Manhattan CBD, compared to 17 percent from Queens.

5A.3.5 Access to Employment in the Manhattan CBD

Chapter 1, "Introduction," describes the commuting behaviors of workers commuting to the Manhattan CBD, both by mode and by county of origin (**Figure 5A-4**). Given that the Project would directly affect the use of driving modes to access employment in the Manhattan CBD, this section provides more detail about existing travel mode choices for people who travel to employment in the Manhattan CBD. It also provides a more detailed discussion of the use of driving modes to commute to Manhattan from areas of New York City that do not have convenient transit access, since these areas may have fewer alternative to vehicle access for convenient travel to the Manhattan CBD.

Figure 5A-4. Work Trips Entering Manhattan CBD (by mode and origin)

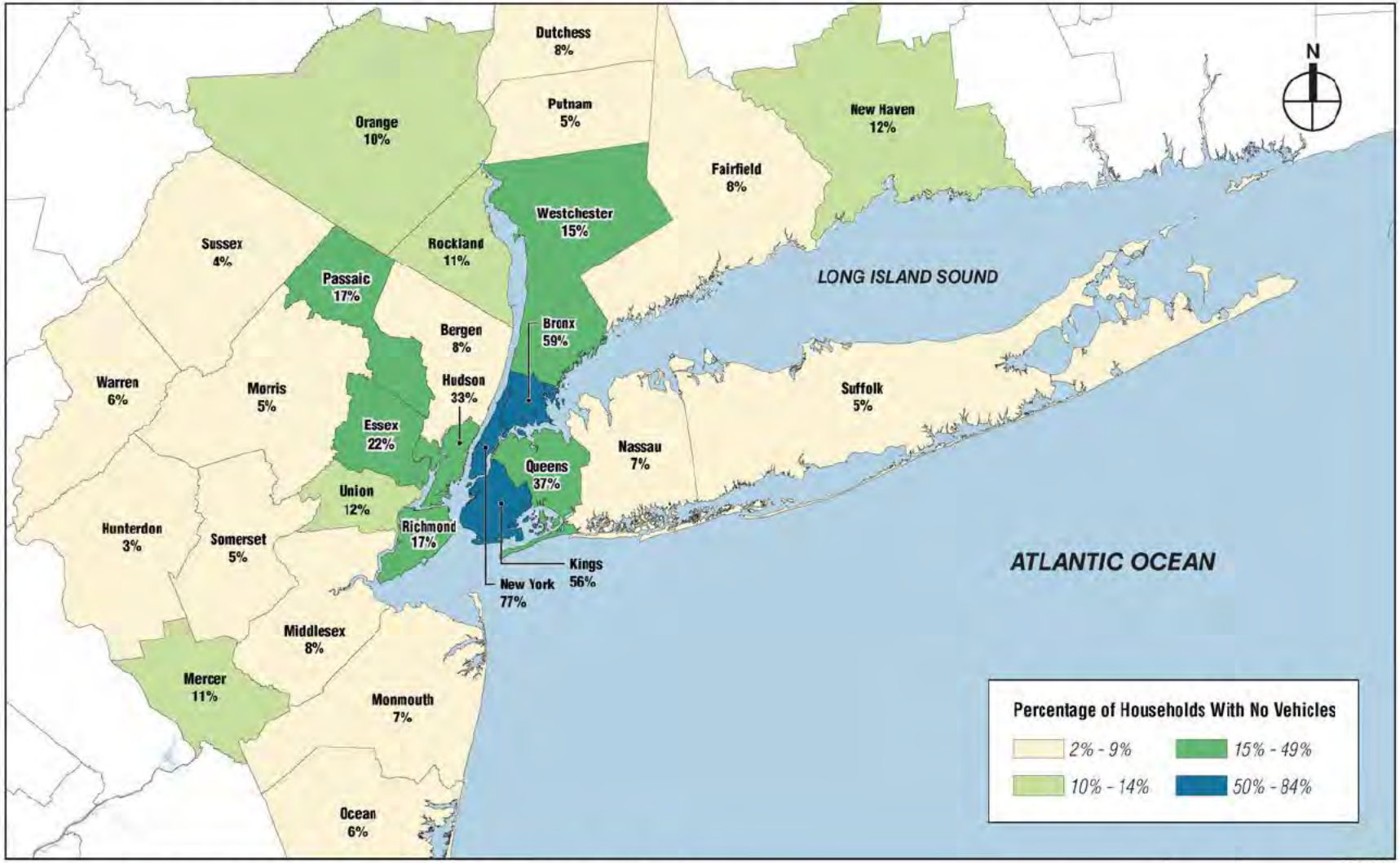


Source: U.S. Census Bureau, CTPP, 2012-2016 Estimates.

[14] FHWA. Status of the Nation's Highways, Bridges, and Transit Conditions & Performance 23rd Edition. Chapter 3, "Travel." https://www.fhwa.dot.gov/policy/23cpr/chap3.cfm#access-to-vehicles.

[15] Trip purpose categories included "Work," "School," Social/Recreational," "Shopping," and "Other"; more detailed options comprising "Other" included "Personal Business," "Home to Serving Passengers/Serving Passengers to Home," and "Other." New York Metropolitan Transportation Council and New Jersey Transportation Planning Authority. October 2014. 2010/2011 Regional Household Travel Survey. p. 124 (Table 4-19). www.nymtc.org/portals/0/pdf/RHTS/RHTS_FinalExecSummary10.6.2014.pdf.

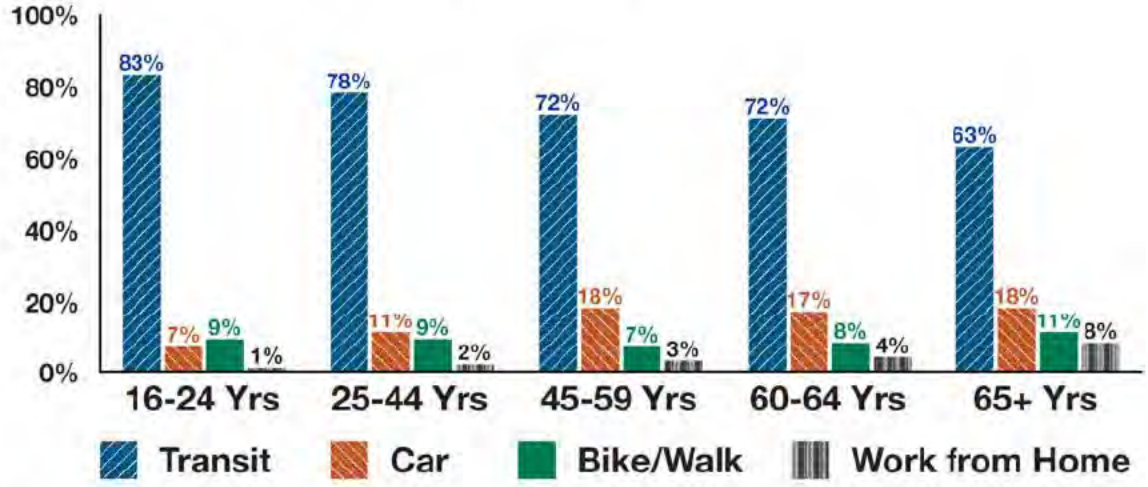
Figure 5A-5. Households in the Regional Study Area with No Vehicle by County



Source: U.S. Census Bureau. American Community Survey 5-Year Estimates, 2015–2019.

Figure 5A-6 provides data on the commute mode choice for travel to work in Manhattan by the age distribution of workers. The most detailed estimates available describe those working in Manhattan as a whole, but these data provide some insight into commute mode and worker age. As **Figure 5A-6** shows, the rate of driving or other auto modes to work is highest for ages 45 and over, with approximately 17 percent to 18 percent of workers commuting to Manhattan by auto. The use of public transportation to commute to work decreases with age, with the lowest rate (63 percent) for workers age 65 and older; even for this age group, the majority of workers use public transportation to commute to work in Manhattan.

Figure 5A-6. Travel Modes to Work (by age of workers)



Sources: Census Transportation Planning Package, American Community Survey 2012-2016

Residents of New York City in particular are most likely to use transit to travel to work in the Manhattan CBD (see **Chapter 1, "Introduction," Figure 1-6**). With a dense network of public transportation options throughout New York City and 24-hour service throughout that network, CTPP data indicate that 88 percent of the New York City residents who travel to work in the Manhattan CBD from outside the CBD use public transportation[16] for their commute. All of New York City is within one-half mile of a commuter rail station, subway station, or bus stop except one small area in southern Queens, a gated community called Breezy Point (see **Figure 5A-3**).

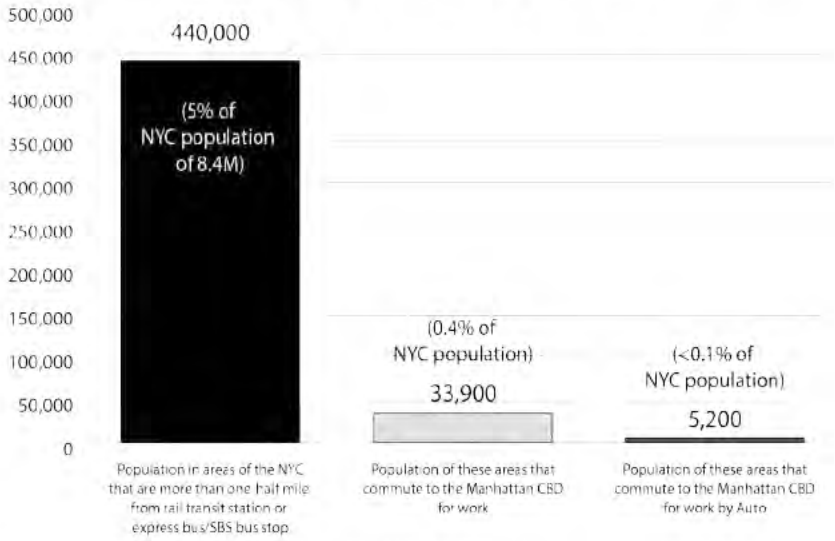
Most of New York City is also within one-half mile of the faster public transportation modes available—commuter rail, subway, express bus, or Select Bus Service (SBS), New York City's growing bus rapid transit system.[17] As shown in **Figure 5A-3**, few neighborhoods in New York City are more than one-half mile from these faster transportation modes. These areas are at the periphery of the city and along the waterfront (and, as noted, do have local bus service). In Manhattan, these areas include the far west side in the West 50s within the Manhattan CBD and on Roosevelt Island outside the Manhattan CBD. In Brooklyn, areas

16 Unless otherwise noted, the terms "public transportation" and "transit" are used interchangeably throughout this chapter.
17 One-half mile represents an approximately 10- to 15-minute walk for an average pedestrian, and therefore indicates the availability of these transportation services.

include the neighborhoods of Red Hook, Borough Park, Rugby-Remsen Village, East New York, and Canarsie. In Queens, portions of the Astoria, College Point, South Ozone Park, Auburndale, Springfield Gardens, Breezy Point, Maspeth, and Ridgewood neighborhoods do not have access to faster public transportation via commuter rail, subway, or express bus/SBS service within one-half mile. In the Bronx, portions of the Soundview, Castle Hill, East Tremont, and Wakefield neighborhoods are more than one-half mile from commuter rail, subway, or express bus/SBS service. In Staten Island, these areas are around the shoreline and in central Staten Island. Some of the areas in New York City that are not close to transit are places from which no one commutes by car to the Manhattan CBD (see **Figure 5A-3**).

Approximately 440,000 people (or about 5.2 percent of the city's 8.4 million residents) live in these areas of New York City that are more than one-half mile from the faster public transportation modes of commuter rail, subway, or express bus/SBS service,[18] and approximately of them 33,900 commute to the Manhattan CBD (**Figure 5A-7**). Approximately 5,200 (15 percent) of these commuters to the Manhattan CBD travel by car.[19] These 5,200 car commuters come from locations distributed around the city with the largest concentrations in the Queens neighborhoods of Maspeth, College Point, Middle Village, and Springfield Gardens, the Soundview neighborhood of the Bronx, and Staten Island. Additional residents may be auto commuters who pass through the Manhattan CBD, but the total number of auto trips, even from areas with less convenient public transit access, is small even if these trips are included. **Chapter 17, "Environmental Justice,"** considers the potential effect of implementation of the CBD Tolling Alternative on low-income and minority populations who live in these areas.

Figure 5A-7. Population and Commuters to Manhattan CBD from Areas More than One-Half Mile from Commuter Rail, Subway, or Express Bus Service



Source: U.S. Census Bureau, CTPP, 2012–2016 Estimate.
Note: All areas of New York City other than Breezy Point, Queens, are within a half mile of local bus service.

[18] This population consists of people living within census tracts that are not within one-half mile of the faster public transportation services, when measured from the center of the census tract to the nearest transit stop.
[19] 2012–2016 CTPP.

Outside of New York City, the rest of the regional study area is also well-served by public transportation, including commuter rail, light rail, and public and private bus routes, and as noted previously, most people who work in the Manhattan CBD use public transportation to travel to and from work. In areas of the regional study area that are farther from New York City and less densely developed and populated, more areas are not within a convenient walking distance of public transportation. However, in those areas, households have a higher rate of access to a vehicle, and residents use or may use their vehicles to access public transportation (e.g., commuter rail stations).

5A.4 ENVIRONMENTAL CONSEQUENCES

5A.4.1 No Action Alternative

The No Action Alternative would not implement a vehicular tolling program with its associated tolling infrastructure and tolling system equipment. With the No Action Alternative, the study area's settlement patterns, transportation mobility (including chronic congestion in and around the Manhattan CBD) would remain similar to the existing affected environment. Overall demographic trends in terms of population and job growth would experience normal background growth. Community cohesion and access to employment for residents of the region would likely be similar to existing conditions.[20]

5A.4.2 CBD Tolling Alternative

This section describes the potential effects of implementation of the CBD Tolling Alternative on population characteristics and community cohesion, when compared with the No Action Alternative, beginning with a description of the potential benefits of the CBD Tolling Alternative and how they relate to social conditions. The section then evaluates the potential effects of the CBD Tolling Alternative on community cohesion and community facilities and services, its potential benefits or adverse effects to certain vulnerable social groups, including elderly populations, persons with disabilities, transit-dependent populations, and nondriver populations; and its effects on access to employment at the regional level.

5A.4.2.1 POTENTIAL BENEFITS TO SOCIAL CONDITIONS

With implementation of the CBD Tolling Alternative, transportation users in the region would benefit through travel-time savings, improved travel-time reliability, reduced vehicle operating costs, improved safety, and reduced air pollutant emissions. These changes would positively affect community connections and access to employment, education, healthcare, and recreation for residents. The CBD Tolling Alternative would result in the following social benefits:

- **Travel-Time Savings:** People in the region making trips to or within the Manhattan CBD by auto, FHV/taxi, bus, paratransit, or truck would benefit from travel-time savings improvements relative to the No Action Alternative due to decreased congestion within the Manhattan CBD. Part of these travel-time savings benefits would be offset by the increased transportation cost for those trips under the CBD Tolling Alternative in the form of a toll. People traveling by vehicle in the Manhattan CBD would

[20] Existing conditions described in this chapter are for conditions prior to the onset of the COVID-19 pandemic and therefore do not reflect changes to social conditions that may emerge as the pandemic subsides. At this time, it would be speculative to describe long-term (post-pandemic) changes to social conditions.

also benefit from travel-time savings due to decreased congestion in the Manhattan CBD and on other roadways. These benefits would occur in all tolling scenarios, with a reduction in vehicles crossing into the Manhattan CBD each day ranging from 15.4 percent to 19.9 percent and a reduction in daily VMT in the Manhattan CBD of 7.1 percent to 9.2 percent (see **Table 4A-5** and **Table 4A-7** in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"**). Tolling Scenario E would result in the greatest benefit, with 19.9 percent fewer vehicles entering the Manhattan CBD each day and a reduction of 9.2 percent in VMT relative to the No Action Alternative.

- **Reliability Benefits:** People traveling by auto, taxi/FHV, bus, paratransit, or truck to or within the Manhattan CBD would benefit from improved travel-time reliability due to the reduced congestion. Improvements to transportation system capacity or reliability can have social benefits such as greater ease of making and maintaining social ties and higher quality of life. Reliability of travel time refers to the level of travel time uncertainty. When travel times are unpredictable, travelers typically allow more time for their trip to account for possible delays. By reducing congestion in the Manhattan CBD, the CBD Tolling Alternative would reduce the current uncertainty associated with travel in the Manhattan CBD and allow travelers to reduce the buffer time set aside for their trip. Benefits would accrue not only to automobile passengers but also to bus passengers who would be able to rely on evenly spaced buses with reliable schedules. These benefits would also apply to school bus passengers and users of paratransit services.

- **Safety Benefits:** In all tolling scenarios, the CBD Tolling Alternative would result in fewer vehicles accessing the Manhattan CBD, which would help to reduce conflicts between vehicles and between vehicles and pedestrians and bicyclists, leading to an overall benefit to safety. The reduction in regional VMT because of the CBD Tolling Alternative could also lead to regional safety benefits. Some research indicates that VMT is directly related to the rate of fatal crashes;[21] therefore, the reduction in VMT could lead to a decrease in traffic fatalities in the region. Enhanced safety would benefit social conditions by improving community connectivity, reducing social isolation, and facilitating more physical activity and use of nonmotorized modes of transportation. While the increase in potential safety benefits may be offset to some degree by the propensity for drivers to drive at greater speeds in less congested conditions, experience with the London congestion-based pricing system suggests that the overall effect would be net positive; within the London zone, between 2000 and 2010 traffic collisions decreased by 40 percent per VMT.[22]

- **Accessibility Benefits:** Accessibility can be understood as the attractiveness of a place of origin (how easy it is to get from there to all other destinations) or of a destination (how easy it is to get to there from all other origins). Enhanced accessibility can benefit social conditions by improving community connections and access to employment, education, health care, and recreation. The CBD Tolling Alternative would improve accessibility for travelers throughout the region by decreasing roadway congestion. The CBD Tolling Alternative would also improve accessibility for disabled individuals

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21 Reid Ewing, Shima Hamidi and James Grace. 2016. "Urban Sprawl as a Risk Factor in Motor Vehicle Crashes," *Urban Studies*, Vol. 53/2, pp. 247 to 266. digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.ca/&httpsredir=1&article=1911&context=usgsstaffpub.

22 Davis, Alex. 2015. "London's Congestion Pricing Plan is Saving Lives." *Wired Magazine*. https://www.wired.com/2015/03/londons-congestion-pricing-plan-saving-lives/.

throughout the region by providing benefits to improve paratransit services, such as reduced roadway congestion and travel-time improvements as discussed above.

5A.4.2.2 COMMUNITY COHESION

This section evaluates potential effects to community cohesion resulting from the CBD Tolling Alternative. As noted previously in the discussion of the affected environment, community cohesion and civic life in the regional study area are typically local, organized around neighborhoods and communities, and in most cases are not focused on economic, social, and cultural ties to the Manhattan CBD. Therefore, this analysis focuses on the three primary ways the CBD Tolling Alternative could potentially affect community cohesion through travel pattern changes to and from the Manhattan CBD:

- **Installation of Tolling Infrastructure and Equipment:** The CBD Tolling Alternative would involve the installation of tolling infrastructure and tolling system equipment. This analysis considers whether this infrastructure and equipment would create a physical barrier that could separate or isolate communities.
- **Changes to Travel Patterns:** The CBD Tolling Alternative would change travel patterns and alter people's choices of how to travel into and out of the Manhattan CBD and would encourage more people to use transit to access the Manhattan CBD. The concern with respect to changing travel patterns and greater use of transit services is whether these changes would weaken community cohesion either by making it more difficult for people to physically connect with others throughout the region or by overburdening transit infrastructure that communities rely on for social ties.
- **Potential for Residential Displacement**: The CBD Tolling Alternative would not require any property acquisition or direct displacement of residences. This analysis evaluates whether implementation of the CBD Tolling Alternative would have the potential to result in indirect displacement of residents.

The following subsections address each of these concerns with respect to community cohesion. In addition, Chapter 17, "Environmental Justice," considers these effects on low-income and minority populations.

Installation of Tolling Infrastructure and Equipment

The CBD Tolling Alternative would place tolling infrastructure and tolling system equipment within or adjacent to existing transportation rights-of-way, including sidewalks, and, in very limited instances, public parkland. As discussed in Chapter 2, "Project Alternatives," Section 2.4.2.2, the tolling infrastructure would include poles and mast arms, similar to those used for streetlights and traffic lights today; tolling system equipment including reader and meter cabinets and cameras; and signage similar in size and character to signs already present throughout Manhattan. Chapter 2, "Project Alternatives," Figure 2-3 illustrates the proposed infrastructure; in addition, figures in Chapter 9, "Visual Resources," provide before and after views of selected locations where new tolling infrastructure and tolling system equipment is proposed. The signage would be similar in size and nature to existing signs already in place. Therefore, this tolling infrastructure, tolling system equipment, and signage would not create a physical barrier that could separate or isolate communities, and therefore would not result in adverse effects to community cohesion.

Changes to Travel Patterns

The new toll for vehicles entering or remaining in the Manhattan CBD with the CBD Tolling Alternative would change travel patterns and alter people's choices of how to travel into and out of the Manhattan CBD. This section summarizes the changes in daily trips under the No Action Alternative and with the CBD Tolling Alternative. The transportation modeling conducted for the Project using the Best Practice Model (BPM) provides information on the projected changes in travel patterns between the No Action Alternative and the CBD Tolling Alternative (**Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"**). The BPM results include changes in daily journeys, which are the round-trips from origin to destination and back to origin again.[23] The BPM is a regional transportation model used to predict changes in mode and route that would result from modifications to the transportation system, using adopted regional population, labor force, and employment forecasts. The model does not (and cannot) predict changes to the numbers of residents, workers, or jobs in the region but rather assumes that those numbers remain constant.

The section presents the change in total daily journeys to the Manhattan CBD and the change in non-work-related journeys (e.g., daily round trips with any combination or linked trips excluding the journey to work such as school, shopping, medical care, or entertainment purposes) to the Manhattan CBD. The different tolling scenarios would have varying effects on different areas (e.g., New Jersey vs. Long Island), and the particular tolling scenario that would result in the greatest change in trips varies depending on the area. This section presents data on travel patterns for each tolling scenario for each subarea of the regional study area.[24] The travel pattern data presented in this section include all modes of transport, including auto modes, public transportation modes, and walking and biking.[25]

<u>Changes to Total Daily Journeys to the Manhattan CBD by All Modes</u>

Overall, the model results show that all tolling scenarios would result in changes to the distribution of total daily journeys to the Manhattan CBD compared to the No Action Alternative, with an increase in total daily journeys from New Jersey and Long Island and a decrease in total daily journeys from portions of New York north of New York City, and Upper Manhattan, the Bronx, Queens, and Brooklyn. **Table 5A-2** and **Table 5A-3** present data on projected total daily journeys to the Manhattan CBD for each tolling scenario. The largest decrease in travel via all modes (i.e., including auto, public transportation, and walk/bike modes) into the Manhattan CBD would be approximately 3 percent for areas of Manhattan outside the Manhattan CBD under Tolling Scenario D. Daily journeys between New Jersey counties and the Manhattan CBD would increase by 1.9 percent to 3.5 percent and daily journeys between Long Island and the Manhattan CBD would increase by 2.5 percent to 3.7 percent, depending on the tolling scenario. In New York City, daily journeys to and from the Manhattan CBD would decrease in the Bronx, Brooklyn, other areas of Manhattan, and Queens, but would increase in Staten Island. The rest of Manhattan would have the largest percentage

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[23] More specifically, as described in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling,"** a journey is defined as round-trip travel between principal and anchor locations such as home, work, school, retail, and entertainment.

[24] Subareas include each New York City county (boroughs), outside the Manhattan CBD, inside the Manhattan CBD, Long Island counties, New York counties north of New York City, New Jersey counties, and Connecticut counties.

[25] Modes of transport in the BPM consist of the following: drive alone, high-occupancy vehicle/shared ride, taxi/FHV, commuter rail, other transit (e.g., subway, bus), walk and bike, and school bus.

decrease in daily travel into the Manhattan CBD, with a decrease of approximately 1.5 percent to 2.8 percent, depending on the tolling scenario. Staten Island would experience an increase of approximately 3.8 percent to 7.2 percent in daily journeys to the Manhattan CBD, depending on the tolling scenario, with the absolute number compared to the No Action Alternative of approximately 1,600 to 3,000 new journeys.

Changes to Daily Non-Work-Related Journeys to the Manhattan CBD by All Modes

Table 5A-4 and Table 5A-5 show the projected change in daily non-work-related travel into the Manhattan CBD by county of origin for all tolling scenarios (by all modes of transport [i.e., auto modes, public transportation modes, and walking/biking]). For non-work-related journeys, the BPM assumes that the total number of these discretionary trips remains steady regionwide, but the destination of non-work-related travel (e.g., for school, shopping, medical care, or entertainment or a combination of such trips) could change because of a change to the transportation network. For all tolling scenarios, the total number of these journeys would remain essentially the same between tolling scenarios (the small differences are due to rounding in the model results), but the destinations of the non-work-related journeys would vary. The largest percentage decreases in non-work-related journeys into the Manhattan CBD would be from New York counties north of New York City, with a decrease of 12 percent under Tolling Scenario E, a decrease of approximately 900 daily journeys. Brooklyn, Queens, and the Bronx would experience smaller percentage decreases of 2.9 percent (Tolling Scenario D), 2.8 percent (Tolling Scenario D), and 4.4 percent (Tolling Scenario E), respectively. Brooklyn and Queens would experience decreases of approximately 2,300 and 1,800 journeys, respectively. Non-work-related journeys to the Manhattan CBD from areas of Manhattan north of 60th Street would also decrease, with the greatest decrease (3,800 daily journeys) under Tolling Scenario D (decrease of 4.3 percent). The BPM projects an increase in non-work-related journeys from New Jersey counties, Long Island, Connecticut counties, and Staten Island to the Manhattan CBD. Table 5A-5 also shows marginal increases in non-work Manhattan CBD journeys originating within the Manhattan CBD, likely due to reductions in congestion, which would encourage additional non-work journeys within the Manhattan CBD. Overall, in all tolling scenarios, the decrease in non-work-related journeys to the Manhattan CBD would be from origins distributed throughout the 28-county study area, from many different communities throughout the region.

Potential Community Cohesion Effects

The model results indicate that with the CBD Tolling Alternative some areas would have more trips to the Manhattan CBD and some areas would have fewer, as compared to the No Action Alternative. As noted above, the concern with respect to changing travel patterns is whether they would weaken community cohesion by making it more difficult for people to physically connect with others in their community.

Table 5A-2. Total Daily Journeys to/from the Manhattan CBD by Tolling Scenario (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
New York City	**2,139,533**	**2,131,066**	**2,131,928**	**2,130,513**	**2,125,391**	**2,125,464**	**2,127,367**	**2,128,633**
Bronx	155,745	153,637	154,033	153,142	152,314	152,183	153,269	152,802
Kings (Brooklyn)	406,340	404,134	405,087	403,773	402,173	402,084	404,271	403,533
New York (Manhattan)	1,176,953	1,173,182	1,172,443	1,173,240	1,172,230	1,172,844	1,170,525	1,172,714
Inside Manhattan CBD[1]	879,667	880,292	879,506	882,033	883,365	883,222	880,713	881,592
Outside Manhattan CBD	297,286	292,890	292,937	291,207	288,865	289,622	289,812	291,122
Queens	358,122	355,812	356,002	354,938	354,368	354,350	354,576	355,266
Richmond (Staten Island)	42,373	44,301	44,363	45,420	44,306	44,003	44,726	44,318
Long Island Counties[2]	**160,446**	**165,458**	**166,094**	**164,980**	**164,610**	**165,643**	**164,487**	**166,421**
New York Counties North of New York City[3]	**113,457**	**111,112**	**111,518**	**111,855**	**110,885**	**110,632**	**111,111**	**111,318**
New Jersey Counties[4]	**329,943**	**336,247**	**336,616**	**338,878**	**340,413**	**341,579**	**341,330**	**338,753**
Connecticut Counties[5]	**59,997**	**59,798**	**60,153**	**60,297**	**60,191**	**59,398**	**60,505**	**59,392**
TOTAL	**2,803,376**	**2,803,681**	**2,806,309**	**2,806,523**	**2,801,490**	**2,802,716**	**2,804,800**	**2,804,517**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Table 5A-3. Change in Total Daily Journeys to/from the Manhattan CBD Compared to No Action Alternative (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	SCENARIO A		SCENARIO B		SCENARIO C		SCENARIO D		SCENARIO E		SCENARIO F		SCENARIO G	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
New York City	**-8,467**	**-0.4%**	**-7,605**	**-0.4%**	**-9,020**	**-0.4%**	**-14,142**	**-0.7%**	**-14,069**	**-0.7%**	**-12,166**	**-0.6%**	**-10,900**	**-0.5%**
Bronx	-2,108	-1.4%	-1,712	-1.1%	-2,603	-1.7%	-3,431	-2.2%	-3,562	-2.3%	-2,476	-1.6%	-2,943	-1.9%
Kings (Brooklyn)	-2,206	-0.5%	-1,253	-0.3%	-2,567	-0.6%	-4,167	-1.0%	-4,256	-1.0%	-2,069	-0.5%	-2,807	-0.7%
New York (Manhattan)	-3,771	-0.3%	-4,510	-0.4%	-3,713	-0.3%	-4,723	-0.4%	-4,109	-0.3%	-6,428	-0.5%	-4,239	-0.4%
Inside Manhattan CBD[1]	625	0.1%	-161	0.0%	2,366	0.3%	3,698	0.4%	3,555	0.4%	1,046	0.1%	1,925	0.2%
Outside Manhattan CBD	-4,396	-1.5%	-4,349	-1.5%	-6,079	-2.0%	-8,421	-2.8%	-7,664	-2.6%	-7,474	-2.5%	-6,164	-2.1%
Queens	-2,310	-0.6%	-2,120	-0.6%	-3,184	-0.9%	-3,754	-1.0%	-3,772	-1.1%	-3,546	-1.0%	-2,856	-0.8%
Richmond (Staten Island)	1,928	4.6%	1,990	4.7%	3,047	7.2%	1,933	4.6%	1,630	3.8%	2,353	5.6%	1,945	4.6%
Long Island Counties[2]	**5,012**	**3.1%**	**5,648**	**3.5%**	**4,534**	**2.8%**	**4,164**	**2.6%**	**5,197**	**3.2%**	**4,041**	**2.5%**	**5,975**	**3.7%**
New York Counties North of New York City[3]	**-2,345**	**-2.1%**	**-1,939**	**-1.7%**	**-1,602**	**-1.4%**	**-2,572**	**-2.3%**	**-2,825**	**-2.5%**	**-2,346**	**-2.1%**	**-2,139**	**-1.9%**
New Jersey Counties[4]	**6,304**	**1.9%**	**6,673**	**2.0%**	**8,935**	**2.7%**	**10,470**	**3.2%**	**11,636**	**3.5%**	**11,387**	**3.5%**	**8,810**	**2.7%**
Connecticut Counties[5]	**-199**	**-0.3%**	**156**	**0.3%**	**300**	**0.5%**	**194**	**0.3%**	**-599**	**-1.0%**	**508**	**0.8%**	**-605**	**-1.0%**
TOTAL	**305**	**0.0%**	**2,933**	**0.1%**	**3,147**	**0.1%**	**-1,886**	**-0.1%**	**-660**	**0.0%**	**1,424**	**0.1%**	**1,141**	**0.0%**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Table 5A-4. Daily Non-Work-Related Journeys into the Manhattan CBD by County of Origin (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
New York City	**796,263**	**793,158**	**795,050**	**793,230**	**790,236**	**790,916**	**793,468**	**792,147**
Bronx	41,511	40,239	40,971	40,352	39,707	39,691	40,314	40,401
Kings (Brooklyn)	80,405	79,193	79,998	79,218	78,082	78,373	79,390	78,643
New York (Manhattan)	601,900	601,749	601,362	600,892	600,864	601,196	601,131	601,306
Inside Manhattan CBD[1]	513,511	515,465	514,613	514,979	516,264	516,425	515,506	515,380
Outside Manhattan CBD	88,389	86,284	86,749	85,913	84,600	84,771	85,625	85,926
Queens	61,828	60,638	61,236	60,645	60,069	60,423	61,129	60,413
Richmond (Staten Island)	10,619	11,339	11,483	12,123	11,514	11,233	11,504	11,384
Long Island Counties[2]	**16,566**	**17,188**	**17,314**	**16,675**	**16,568**	**16,789**	**16,724**	**17,382**
New York Counties North of New York City[3]	**7,640**	**7,162**	**7,182**	**7,190**	**6,752**	**6,749**	**6,962**	**7,066**
New Jersey Counties[4]	**46,807**	**48,993**	**49,582**	**50,187**	**49,701**	**49,956**	**50,305**	**50,063**
Connecticut Counties[5]	**1,514**	**1,486**	**1,786**	**1,872**	**1,807**	**1,720**	**1,901**	**1,764**
TOTAL	**868,790**	**867,987**	**870,914**	**869,154**	**865,064**	**866,130**	**869,360**	**868,422**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Table 5A-5. Change in Daily Non-Work-Related Journeys into the Manhattan CBD Compared to No Action Alternative (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	SCENARIO A		SCENARIO B		SCENARIO C		SCENARIO D		SCENARIO E		SCENARIO F		SCENARIO G	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
New York City	**-3,105**	**-0.4%**	**-1,213**	**-0.2%**	**-3,033**	**-0.4%**	**-6,027**	**-0.8%**	**-5,347**	**-0.7%**	**-2,795**	**-0.4%**	**-4,116**	**-0.5%**
Bronx	-1,272	-3.1%	-540	-1.3%	-1,159	-2.8%	-1,804	-4.3%	-1,820	-4.4%	-1,197	-2.9%	-1,110	-2.7%
Kings (Brooklyn)	-1,212	-1.5%	-407	-0.5%	-1,187	-1.5%	-2,323	-2.9%	-2,032	-2.5%	-1,015	-1.3%	-1,762	-2.2%
New York (Manhattan)	-151	0.0%	-538	-0.1%	-1,008	-0.2%	-1,036	-0.2%	-704	-0.1%	-769	-0.1%	-594	-0.1%
Inside Manhattan CBD[1]	1,954	0.4%	1,102	0.2%	1,468	0.3%	2,753	0.5%	2,914	0.6%	1,995	0.4%	1,869	0.4%
Outside Manhattan CBD	-2,105	-2.4%	-1,640	-1.9%	-2,476	-2.8%	-3,789	-4.3%	-3,618	-4.1%	-2,764	-3.1%	-2,463	-2.8%
Queens	-1,190	-1.9%	-592	-1.0%	-1,183	-1.9%	-1,759	-2.8%	-1,405	-2.3%	-699	-1.1%	-1,415	-2.3%
Richmond (Staten Island)	720	6.8%	864	8.1%	1,504	14.2%	895	8.4%	614	5.8%	885	8.3%	765	7.2%
Long Island Counties[2]	**622**	**3.8%**	**748**	**4.5%**	**109**	**0.7%**	**2**	**0.0%**	**223**	**1.3%**	**158**	**1.0%**	**816**	**4.9%**
New York Counties North of New York City[3]	**-478**	**-6.3%**	**-458**	**-6.0%**	**-450**	**-5.9%**	**-888**	**-11.6%**	**-891**	**-11.7%**	**-678**	**-8.9%**	**-574**	**-7.5%**
New Jersey Counties[4]	**2,186**	**4.7%**	**2,775**	**5.9%**	**3,380**	**7.2%**	**2,894**	**6.2%**	**3,149**	**6.7%**	**3,498**	**7.5%**	**3,256**	**7.0%**
Connecticut Counties[5]	**-28**	**-1.8%**	**272**	**18.0%**	**358**	**23.6%**	**293**	**19.4%**	**206**	**13.6%**	**387**	**25.6%**	**250**	**16.5%**
TOTAL	**-803**	**-0.1%**	**2,124**	**0.2%**	**364**	**0.0%**	**-3,726**	**-0.4%**	**-2,660**	**-0.3%**	**570**	**0.1%**	**-368**	**0.0%**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

The journeys presented in the BPM results are for travel undertaken between two geographic areas for a particular reason—work, school, shopping, medical care, entertainment, etc. These are activities that indicate social and community ties between two areas. An increase in total daily journeys and daily non-work-related journeys to the Manhattan CBD suggests that a geographic area would potentially have more social ties and stronger community connections to the Manhattan CBD with the CBD Tolling Alternative as compared to the No Action Alternative. As described in the previous subsection, areas that would see increases in daily trips to the Manhattan CBD include New Jersey, Long Island, and Staten Island. The model results also show marginal increases in nonwork-related Manhattan CBD journeys originating within the Manhattan CBD, indicating additional journeys and connections for Manhattan CBD residents likely due to the reduction in congestion in the Manhattan CBD.

A decrease in total daily journeys and daily non-work-related journeys to the Manhattan CBD suggests that a geographic area could have fewer social ties and weaker community connections to the Manhattan CBD with the CBD Tolling Alternative as compared to the No Action Alternative. However, as described earlier, the decreases in total daily journeys and daily non-work-related journeys would be small—in general, decreases of about 4 percent or less depending on the origin geographic area and the tolling scenario. Where decreases of more than 4 percent would occur (e.g., the decrease in daily non-work-related journeys from New York counties north of New York City), the number of forgone journeys would be very small (approximately 900 journeys under Tolling Scenario E), compared to overall number of daily non-work-related journeys to the Manhattan CBD. Moreover, as noted earlier, the decrease in non-work-related journeys to the Manhattan CBD would be from origins distributed throughout the 28-county study area, from many different communities throughout the region. The decrease in total daily journeys and daily non-work-related journeys to the Manhattan CBD and their distribution throughout the region, rather than from particular locations or communities, indicates that most regional social ties and community connections to the Manhattan CBD would be maintained with the CBD Tolling Alternative.

For New York City, the model results predict decreases in total daily journeys and non-work-related journeys to the Manhattan CBD from Brooklyn, Queens, the Bronx, and areas of Manhattan north of 60th Street. In these areas, many different communities, including the physical neighborhoods and other cultural, religious, artistic, or activity-based communities, are closely tied to the Manhattan CBD. The decrease in non-work-related journeys to the Manhattan CBD from areas of Manhattan north of 60th Street, Brooklyn, Queens, and the Bronx, indicate that the CBD Tolling Alternative would discourage some travel into the Manhattan CBD by making driving there more expensive. As previously described, the forgone journeys to the Manhattan CBD from other areas of New York City would be a very small portion of the total daily journeys and non-work-related journeys to the Manhattan CBD from those areas, indicating that community cohesion and connection to the Manhattan CBD would be maintained. As noted earlier in the discussion of the affected environment, most people use transit to make their trips to the Manhattan CBD, and these trips would not be affected by the CBD Tolling Alternative.

All areas of New York City outside the Manhattan CBD have transit access to the Manhattan CBD and would not be isolated from community services or ties within the Manhattan CBD (see Figure 5A-3). For example, Manhattan's Chinatown neighborhood is an important destination for New York City's Chinese American

community, as are other specific neighborhoods throughout New York City and the region, such as those in Flushing, Queens; and Sunset Park, Bensonhurst, and Sheepshead Bay, Brooklyn. Access to Manhattan's Chinatown may be important for community cohesion among residents of these neighborhoods, and these areas would continue to have transit access to the Manhattan CBD with the CBD Tolling Alternative. Within Manhattan, neighborhoods are highly walkable or accessible via transit across 60th Street into the Manhattan CBD for most people. (For a discussion of effects on vulnerable social groups, including elderly populations, persons with disabilities, and transit-dependent populations, see **Subsection 5A.4.2.4, "Effects on Vulnerable Social Groups,"** later in this subchapter.)

As described in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling,"** the CBD Tolling Alternative would result in a mode shift to transit across the region, with some of the decline in auto access to the Manhattan CBD translating to increases in transit trips (e.g., commuter rail, subway, bus, tram, and ferry). As discussed in **Subchapter 4C, "Transportation: Transit,"** the CBD Tolling Alternative would not result in adverse effects to the line-haul capacity of transit services serving the Manhattan CBD. None of the passenger increases on rail and subway transit routes or buses entering the Manhattan CBD, or on the Staten Island Ferry, would result in adverse effects related to line-haul capacity.[26] For subway routes, passenger increases would be below the impact threshold increment of 5 or more new passengers per car during the AM peak hour. There would be increased ridership on bus routes that would be accommodated by existing service levels. The CBD Tolling Alternative would also result in an increase in the number of passengers using transit stations in the regional transit system. As discussed in **Subchapter 4C, "Transportation: Transit,"** with improvements, the CBD Tolling Alternative would not result in unmitigated adverse effects on transit stations. Consequently, overall, potential transit ridership increases resulting from the CBD Tolling Alternative would not adversely affect community cohesion by overburdening transit infrastructure.

Notwithstanding the transit accessibility between the Manhattan CBD, New York City, and the regional study area, there would be an additional cost with the CBD Tolling Alternative for individuals who choose to drive, who do not have access to transit, or who must rely on driving to get to the Manhattan CBD. As noted in **Chapter 17, "Environmental Justice,"** and **Chapter 18, "Agency Coordination and Public Participation,"** during early public outreach for the Project in fall 2021, members of the public raised concerns related to the increased cost of travel to the Manhattan CBD for low-income drivers, low- and middle-income families in the Manhattan CBD, and residents of the Manhattan CBD travelling regionally to visit family and friends outside the Manhattan CBD. The costs incurred by individuals driving to the Manhattan CBD would vary widely, depending on individual circumstances and the specific tolling scenario (see **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling," Section 4A.4.5**). The greatest cost would be incurred by those who make frequent driving journeys to the Manhattan CBD during peak hours. Driving to and from the Manhattan CBD is already expensive given the very limited availability of free or low-cost parking and the cost of off-street parking or taxi/FHV fares, and it is likely that people who drive regularly have higher incomes.[27] Individuals who drive less frequently would incur lower costs

[26] Transit line-haul capacity is the capacity of a transit mode at its peak ridership point.

[27] FHWA. *Status of the Nation's Highways, Bridges, and Transit. Conditions & Performance. 23rd Edition.* Chapter 3 Travel. Impact of Income Distribution on Travel. October 22, 2020. https://www.fhwa.dot.gov/policy/23cpr/index.cfm.

because of the toll. ***[See Chapter 17, "Environmental Justice," Section 17.7, for mitigation measures the Project Sponsors will implement to address increased costs for low-income drivers to the Manhattan CBD, including new measures added for the Final EA.]***

Potential for Residential Displacement

Another concern related to community cohesion is the potential for a project to affect population and housing characteristics of an area by causing direct or indirect residential displacement.

Direct residential displacement occurs when residents must move from their homes as a direct result of an action. As noted above, the tolling infrastructure and tolling system equipment associated with the CBD Tolling Alternative would be within or adjacent to existing transportation rights-of-way, including sidewalks, and, in very limited instances, public parkland, and would not involve the acquisition of private property or the displacement of any residential uses.

Indirect residential displacement occurs when a change in socioeconomic conditions resulting from a project leads to conditions that require residents to move, such as increased rents or other increases in the cost of living. As noted in **Chapter 17, "Environmental Justice,"** and **Chapter 18, "Agency Coordination and Public Participation,"** during early public outreach for the Project in fall 2021, members of the public voiced concerns about the potential for indirect displacement of low-income residents to occur as a result of the CBD Tolling Alternative.

Indirect residential displacement can occur when a project results in substantial new development that is markedly different from existing uses, development, and activities within a neighborhood, and thus alters one or more of the underlying forces that shape real estate market conditions in an area. The CBD Tolling Alternative would not result in substantial new development or uses that would be markedly different from existing uses and activities within neighborhoods. More importantly, as discussed in this subsection, the CBD Tolling Alternative would not alter socioeconomic conditions related to the following, and therefore would not be likely to result in indirect displacement:

- Potential for residents relocating to avoid the cost of the toll
- Potential for indirect displacement because of increased cost of living within the Manhattan CBD or elsewhere

<u>Potential for Residents Relocating to Avoid the Cost of the Toll</u>

The CBD Tolling Alternative would introduce a new cost for residents of the Manhattan CBD who travel by vehicle into and out of the Manhattan CBD. However, only a small percentage of journeys within and from the Manhattan CBD are by vehicle, and residents who travel by other modes would not pay the toll. As described earlier in this subchapter in the discussion of the affected environment, approximately 20 percent of the residents of the Manhattan CBD have access to a vehicle. Based on the BPM results, approximately 1.0 million total daily journeys would occur within or from the Manhattan CBD under any tolling scenario and in the No Action Alternative, and approximately 10 percent of these journeys would be by driving (either the drive alone, high-occupancy vehicle, or taxi/FHV modes). In addition, residents of the Manhattan CBD whose New York adjusted gross income for the taxable year is less than $60,000 would be

entitled to a New York State tax credit equal to the aggregate amount of Manhattan CBD tolls paid during the taxable year, as discussed in Chapter 2, "Project Alternatives." Overall, the additional cost of the toll is not expected to substantively affect population characteristics of the Manhattan CBD by inducing CBD residents to relocate to avoid the toll.

For other residents of the regional study area, the new toll with the CBD Tolling Alternative could lead them to relocate out of the region entirely to avoid extra commuting costs. However, this would be unlikely to result in indirect residential displacement. Many factors influence a household's decision about where to live, and each household seeking to avoid the toll would undertake its own decision-making process. Any changes in residential patterns would be broadly distributed throughout the regional study area because of the wide variety of factors that influence a household's decision about where to live, including housing costs, work location and commuting, income, proximity to family and friends, schools, and perceptions about safety and crime. Certain households, such as low-income households or those tied to protected housing units (i.e., housing units that are rent-stabilized, rent-controlled, public housing, Mitchell-Lama rental, or subject to other regulations), may not be able to afford to move. Households seeking to avoid the toll would undertake their own decision-making process balancing these and other factors and reflecting their own unique priorities and preferences, and they would reach different conclusions about whether to relocate and, if so, to where. It is unlikely that the toll would outweigh the other factors that influence a household's decision on where to live such that it would result in indirect residential displacement. Furthermore, areas near the Manhattan CBD, where residents have the most social and community ties to the Manhattan CBD and are most likely to travel regularly to the Manhattan CBD, have high levels of transit access to the Manhattan CBD. Residents of these areas would continue to be able to use transit to access the Manhattan CBD and avoid the toll. Therefore, the CBD Tolling Alternative would not substantively affect population characteristics of the regional study area by incentivizing residents to relocate to avoid the toll.

The new toll with the CBD Tolling Alternative would increase the cost of driving into the Manhattan CBD, which could make residential neighborhoods near transit—including the Manhattan CBD itself—more attractive for residents, because this could help residents avoid the toll. However, this is unlikely to affect real estate market values either within the Manhattan CBD or elsewhere. Similar to residents who might seek to relocate from the Manhattan CBD or regional study area, any changes in residential patterns related to residents moving closer to transit would be broadly distributed throughout the regional study area because of the wide variety of factors that influence a household's decision about where to live. Therefore, no particular area would be likely to see a large inflow or outflow of new residents seeking to avoid the toll, and the CBD Tolling Alternative would be unlikely to result in notable changes in real estate market conditions. Any relocation that may occur because of households seeking to avoid the toll would not have the potential to markedly change the demographic or community character of an area, and therefore would not adversely affect community cohesion.

Potential for Indirect Displacement Because of Increased Cost of Living Within the Manhattan CBD or Elsewhere

During early public outreach for the Project in fall 2021, some commenters raised concerns that the CBD Tolling Alternative would result in increased costs of living within the Manhattan CBD that would result in

indirect displacement of low-income residents. However, this is unlikely to occur, because the CBD Tolling Alternative would not result in changes in market conditions that would increase real estate values, so as to result in increased rents; the CBD Tolling Alternative would not result in an increase in the cost of goods within the Manhattan CBD; and low-income residents of the Manhattan CBD would be entitled to a tax credit to offset their tolls.

In terms of increased real estate values, as noted earlier, any changes in residential patterns related to residents moving closer to transit would be broadly distributed throughout the regional study area because of the wide variety of factors that influence a household's decision about where to live. In addition, in areas to which people might move to avoid the toll or be close to transit, the value of residential property and rents is already influenced by the existing proximity to transit. While there could be some additional value to living close to transit (i.e., the value of living near a commuter station) in the future with the CBD Tolling Alternative, there is value to such proximity under existing conditions. The CBD Tolling Alternative itself would not introduce a new residential amenity that could substantively alter rents. Within the Manhattan CBD in particular, residential property values are already well established and influenced by factors such as the area's central location in New York City and its proximity to transit. While some research indicates that a reduction in traffic congestion resulting from congestion pricing could increase residential sales prices and thus could exert upward pressure on rents,[28] the potential social, economic, and environmental benefits from the CBD Tolling Alternative—some of which are detailed in other subsections of this subchapter—would not be substantial enough to markedly influence rents or residential property market conditions given the other factors already influencing New York City's residential real estate market (i.e., its central location and proximity to transit, jobs, cultural amenities, etc.).

Moreover, the substantial number of apartments in the Manhattan CBD that have protected rents (e.g., apartments under the jurisdiction of the New York City Housing Authority and apartments that are protected by New York State's rent control and rent stabilization laws) would not be subject to market-driven prices increases.[29] Furthermore, the Manhattan CBD already has the highest cost of living and highest home prices and rents in the region, and it is unlikely that many individuals would seek to move to the Manhattan CBD specifically to avoid the toll or because of a reduction in congestion. Therefore, the CBD Tolling Alternative would not substantively affect population characteristics of the Manhattan CBD or other transit hubs by attracting new residents seeking to avoid the toll.

Furthermore, as discussed in **Chapter 6, "Economic Conditions,"** the cost of new tolls with the CBD Tolling Alternative would not be likely to result in an appreciable increase in the cost of goods within the Manhattan CBD. In addition, as noted earlier, residents whose primary residence is inside the Manhattan

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[28] A study of conditions in London found that reductions in traffic in the congestion zone increased residential sales prices in the congestion zone. Tang, Cheng Keat. 2018. "Essays in the economics of transportation, housing and discrimination." PhD thesis, The London School of Economics and Political Science. etheses.lse.ac.uk/3797/.

[29] Estimates of protected units in the Manhattan CBD are not available, but approximately 58 percent of the renter-occupied households in New York City reside in protected housing units (i.e., housing units that are rent stabilized, rent controlled, public housing, Mitchell-Lama rental, or subject to HUD or other regulation) with a substantial proportion of these units in Manhattan. Source: Waickman, C. R., Jerome, J. B. R., Place, R. *Sociodemographics of Rent Stabilized Tenants*. New York City Department of Housing Preservation and Development. 2018. www1.nyc.gov/assets/hpd/downloads/pdfs/services/rent-regulation-memo-1.pdf.

CBD and whose New York adjusted gross income for the taxable year is less than $60,000 would be entitled to a New York State tax credit equal to the aggregate amount of Manhattan CBD tolls paid during the taxable year.

5A.4.2.3 COMMUNITY FACILITIES AND SERVICES

This section assesses whether the CBD Tolling Alternative would affect access to and operations of community facilities and services, including potential effects on the workforce for community facilities and services.

The analysis considers the effects of the following:

- Costs to community facilities and service providers that rely on vehicles traveling into and out of the Manhattan CBD
- Costs to people who visit community facilities in the Manhattan CBD
- Costs to the workers who drive to work at community facilities and services in the Manhattan CBD
- Changes in traffic patterns, including potential increases in traffic at some locations, which could affect emergency response times (a community service)

Each of these potential effects on community facilities and services is discussed in the following sections. In addition, Chapter 17, "Environmental Justice," considers these effects on minority and low-income populations.

Costs to Community Facilities and Services

A variety of community facilities and services, such as food pantries and meal delivery services, religious facilities, cultural institutions, social service providers, and home healthcare providers, rely on vehicles to transport people, goods, services, supplies, or staff into and out of the Manhattan CBD. As noted in Chapter 17, "Environmental Justice," and Chapter 18, "Agency Coordination and Public Participation," during early public outreach for the Project in fall 2021, some members of the public raised concerns about the increased cost of travel for nonprofit social service providers that operate in the Manhattan CBD. If these community facilities and services are not exempt from paying the toll, or otherwise reimbursed, they would have to absorb the cost of the toll as part of their operating costs to the extent such funds are available or look for new sources of funding to offset these costs. This would be true for providers located within the Manhattan CBD that provide services to people outside of the Manhattan CBD and providers that are located outside the Manhattan CBD but provide services to Manhattan CBD residents. Increased transportation costs could adversely affect the operations of the service providers if the costs cannot be absorbed or offset through the addition of new funding sources. The costs incurred by various community facilities and services because of the toll would depend on the type of vehicle, how frequently their vehicles need to enter and exit the Manhattan CBD, whether the service provider can consolidate activities or shift to off-peak or overnight hours, whether there is a cap on the number of times a toll can be charged, and other factors. (In all tolling scenarios, automobiles and small vans would pay the toll no more than once per day; some tolling scenarios would have a limit on the number of times per day a truck would pay the

toll and others would not.) Tolling Scenarios B and F would result in lesser effects on services that provide or rely on truck deliveries since they limit the number of times a truck would be charged the CBD toll on a given day. At the same time, community facilities and services that rely on vehicle travel into and out of the Manhattan CBD would benefit from a less congested roadway network.

One example of a community service that may incur additional cost related to the toll is school bus service to and from school across the Manhattan CBD boundary at 60th Street. As described earlier, most students in Manhattan travel to and from school by walking, biking, or public transit. For the school bus operations that occur, the CBD Tolling Alternative would increase the cost of some bus services for NYCDOE if all school buses are not exempt from the toll. (Those school buses carrying students with disabilities would be exempt from the toll under the legislation that created the CBD Tolling Program.) The City of New York would need to set aside funding for this cost, competing with other resource needs.[30] Whether school buses receive an exemption or not, they would still benefit from reduced roadway congestion and additional funds to improve transit service used by their faculty, staff, and students.

Costs to People who Visit Community Facilities and Services

Throughout the regional study area, most community facilities are locally focused, serving their individual communities, although some have a larger regional draw. Most community facilities and services in the Manhattan CBD are close to transit services, making this a viable mode choice for access to those community facilities and, as noted earlier, most travel to and from the Manhattan CBD is by transit. The clientele who use transit would not have increased costs. There would be a cost with the CBD Tolling Alternative to people who drive to community facilities and services in the Manhattan CBD from outside the Manhattan CBD and also to residents of the Manhattan CBD who drive to community facilities outside the Manhattan CBD.

Examples of the type of community facility user who would be affected by the cost of the toll if they drive would be individuals traveling to medical or healthcare facilities, or potentially to a place of worship. These examples are discussed below. As noted in **Chapter 17, "Environmental Justice,"** and **Chapter 18, "Agency Coordination and Public Participation,"** members of the public raised the increased cost of travel for patients traveling to health care facilities in the Manhattan CBD as a concern during early public outreach conducted in fall 2021.

[30] Private schools using buses that pay the CBD toll would have to absorb the costs or pass them on to their students if buses are tolled; in Tolling Scenarios B and F, school buses would be exempt from the toll and in the other tolling scenarios they would be subject to the toll with no cap or exemption.

As described earlier, the rate of vehicle use to access medical facilities depends in part on the facilities' distance to the subway or bus routes (as well as other factors, including the patient's mobility and the type of medical service sought). For medical office uses within one-quarter mile of a subway station, approximately 6 percent of trips to these uses are by auto or taxi/FHV modes, according to data from NYCDOT's mode choice surveys. For medical office uses that are beyond one-quarter mile from a subway station, approximately 14 percent of trips are by auto or taxi/FHV modes. Therefore, most medical trips, even those to facilities more than one-quarter mile from a subway station, are made by modes other than auto or taxi/FHV. With the CBD Tolling Alternative, people traveling to medical facilities in the Manhattan CBD would either continue to travel by vehicle and incur the toll, switch modes to transit to avoid the toll, or seek new medical and healthcare facilities outside of the Manhattan CBD. It may not be reasonable for some individuals to switch modes or seek new medical and healthcare providers. In that case, the CBD Tolling Alternative could increase the cost for certain individuals to access medical facilities and healthcare providers in the Manhattan CBD, depending on their route choice and the tolling scenario. It should be noted that qualifying vehicles—which would include MTA's paratransit service and taxis and FHVs that provide paratransit service on behalf of MTA—transporting people with disabilities would be exempt from the toll. Therefore, disabled people traveling by a qualifying vehicle to or within the Manhattan CBD would not be charged a toll. However, some disabled people may need to use nonqualifying vehicles to access healthcare and medical facilities. In those cases, the CBD Tolling Alternative would result in an additional cost for disabled individuals to access medical facilities and healthcare providers in the Manhattan CBD. Some of this cost may be covered by Medicaid or other insurance, which covers nonemergency medical transportation in certain situations.

The costs incurred by people driving to access medical or healthcare facilities would vary depending on individual circumstances. The greatest cost would be incurred by those who have frequent, regular medical appointments that they drive to (and for whom transit is not an acceptable alternative), and who are not eligible for paratransit or nonemergency medical transportation under Medicaid or other insurance coverage. Driving to and from the Manhattan CBD is already expensive given the very limited availability of free or low-cost parking and the cost of parking or taxi/FHV fares, and it is likely that people who drive regularly to medical appointments would have higher incomes. Individuals who drive infrequently to medical appointments would incur lower costs because of the toll. The increased cost would be partially offset by the travel-time savings provided by a potentially less congested roadway network.

With respect to people traveling to places of worship, as noted earlier, there are some 200 places of worship for many different religions in and around the Manhattan CBD, and some of these places are regionally important. Places of worship are typically accessible by transit, and most do not have on-site visitor parking given the densely developed nature of the Manhattan CBD, which indicates that travel by vehicle is not the predominant mode of transportation for their worshippers. With the CBD Tolling Alternative, individuals would incur an additional cost to travel by vehicle to a place of worship in the Manhattan CBD, or from within the Manhattan CBD to a place of worship outside the Manhattan CBD. The costs incurred by individuals driving to places of worship would vary depending on individual circumstances, as discussed earlier with respect to medical and healthcare facilities. Individuals who use the bus system would benefit from the reduced congestion with the CBD Tolling Alternative.

Overall, given the wide range of travel options other than driving, the cost for users to drive to community facilities and services would not constitute an adverse effect on the operations of community facilities and services.

Costs to Workers at Community Facilities and Services

Workers at community facilities and services, such as teachers, police officers, or health care workers, may choose to commute by automobile to or from the Manhattan CBD because their work schedule is not conducive for transit use, because they have limited transit options to their place of work, or, in some cases, because they have free parking at their place of work. With the CBD Tolling Alternative, there would be a cost to workers associated with commuting by vehicle if they enter or remain in the Manhattan CBD.

As discussed in more detail in **Chapter 6, "Economic Conditions,"** as a result of the CBD Tolling Alternative, such workers would make one of the following decisions: (1) continue to commute by vehicle and incur the toll cost; (2) switch modes to a nonvehicular option before entering the Manhattan CBD to avoid the toll cost; (3) seek new employment opportunities (or other workplace locations with the same employer) at locations that would not involve incurring the toll; (4) relocate their place of residence to the Manhattan CBD; or (5) telecommute, or telecommute more often, to eliminate or reduce the frequency of incurring the toll. Workers that make decision (1), (2), (4), or (5) or seek other workplace locations with their same employer in decision (3) would continue employment at their respective community facility or service employer, and thus would not affect the provision of community facilities or services. These workers would not result in additional costs to their employers because they would either absorb or avoid the toll. It should be noted that decisions (4) and (5) may not be feasible for many workers at community facilities and services. For decision (4), the potential cost savings associated with eliminating a toll would be far outweighed by other cost-of-living and quality-of-life factors given the relatively high rents and home prices within the Manhattan CBD. For decision (5), telecommuting is not a viable option for many types of work, including many types of community facilities and services work.

Many workers at community facilities and services in the Manhattan CBD would have the option to switch from a vehicle to transit to their place of work because the Manhattan CBD is accessible by transit with a range of modes and service providers, including local and express subways, commuter and intercity rail, local and express buses, intercity buses, and ferries. As noted in **Chapter 6, "Economic Conditions,"** the ease of transit access within the Manhattan CBD allows the subset of Manhattan CBD car commuters who would be discouraged by toll costs and who do not have transit access near their homes, to instead drive to a transit station and complete their commute by transit. As noted earlier, all areas of the Manhattan CBD are within one-half mile of transit service, but one area in the West 50s is not within one-half mile of faster transit modes. As shown in **Table 6-11** in **Chapter 6, "Economic Conditions,"** approximately 0.7 percent of all jobs (or 1,415 jobs) in the Manhattan CBD in the "Education, health, and social services" industry category and approximately 0.1 percent of all jobs (or 65 jobs) in the "Public administration," industry category are located more than one-half mile from faster transit at a subway station or express/SBS bus stop. Furthermore, more than 85 percent of jobs in the Manhattan CBD are held by workers who commute by public transportation; approximately 9 percent of Manhattan CBD jobs are held by workers who drive to work alone.

To the extent that some community facilities and services workers who currently drive to work in the Manhattan CBD would seek new employment (i.e., decision (3) above), this would likely happen over time (for example, as people try new modes of transportation to avoid the toll and perhaps ultimately decide to take a new job elsewhere) such that services would be maintained and, if necessary, employers could elect to provide incentives (such as higher pay or reimbursements) to compensate for the cost of the toll to workers. The cost of higher pay for workers in the Manhattan CBD would increase operating costs for the community facility or service provider.

Emergency Response Times

The CBD Tolling Alternative would result in potential changes in traffic patterns, including potential increases in traffic at some locations, which could affect emergency response times. Shifts in traffic patterns would change conditions at some local intersections within and near the Manhattan CBD. Of the more than 102 local intersections analyzed, most intersections would see reductions in or no change in delay. At intersections where the CBD Tolling Alternative would result in increases in delay, the Project will include implementation of signal-timing adjustments to address that delay. Therefore, the increases in delays at local intersections would not adversely affect emergency response times.

Under Tolling Scenarios D, E, and F, the CBD Tolling Alternative would result in increased traffic volumes approaching the Manhattan CBD on the Long Island Expressway (I-495) leading to the Queens-Midtown Tunnel and the Trans-Manhattan Expressway (I-95) between the Alexander Hamilton Bridge and the George Washington Bridge during the midday and PM peak hours. Although there would be some increase in overall travel time at these locations under these tolling scenarios, emergency response vehicles are not bound by standard traffic controls when responding to emergencies and thus may be able to bypass some highway congestion. Therefore, the increased volumes on certain highway segments would not adversely affect emergency response times. The CBD Tolling Alternative would contribute to improved response times in the Manhattan CBD because it would reduce vehicular congestion in the Manhattan CBD.

5A.4.2.4 EFFECTS ON VULNERABLE SOCIAL GROUPS

This section evaluates the Project's potential effects on certain vulnerable social groups, including elderly populations, persons with disabilities, transit-dependent populations, and nondriver populations. The potential effects of the CBD Tolling Alternative on minority and/or low-income populations is evaluated in Chapter 17, "Environmental Justice."

This section draws on the summary of the potential benefits of the CBD Tolling Alternative provided earlier and includes subsections for each of the relevant social groups.

Elderly Individuals

The CBD Tolling Alternative would result in an additional cost to elderly individuals if they travel by auto and enter or remain in the Manhattan CBD. Some elderly people would shift to other modes to avoid the toll, while others would continue to drive and pay the toll, because it is worth the time savings, because they prefer traveling by car, or because they have limited transportation options. The majority (approximately 63 percent) of the approximately 105,000 people age 65 or older who commute to

Manhattan for work take public transit, while approximately 18 percent drive or travel by taxi or FHV.[31] No information is available about travel mode choices for elderly individuals traveling to the Manhattan CBD for non-work-related reasons. As noted in **Chapter 17, "Environmental Justice,"** and **Chapter 18, "Agency Coordination and Public Participation,"** members of the public raised the increased cost of travel for elderly individuals in the Manhattan CBD as a concern during early public outreach conducted in fall 2021.

The costs incurred by elderly individuals driving to the Manhattan CBD would vary depending on how frequently they choose to drive to the Manhattan CBD and at what time of day. As noted earlier, driving to and from the Manhattan CBD is already expensive given the very limited availability of free or low-cost parking and the cost of taxi/FHV fares, and it is likely that people who drive frequently have higher incomes.[32] With the CBD Tolling Alternative, some elderly individuals would likely switch from vehicles to public transit for journeys to the Manhattan CBD, consistent with BPM data that indicate an overall reduction in driving mode share to the Manhattan CBD ranging from 4 percent (with Tolling Scenario B) to 10 percent (with Tolling Scenario E), or approximately 19,900 to 49,500 fewer daily driving journeys to the Manhattan CBD. **Table 4A-8** in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling,"** provides more information on the predicted change in mode share to the Manhattan CBD.

There are various reasons that elderly people drive to the Manhattan CBD, including trips to work, trips to shop, dine, or attend a performance, trips to visit friends or family, and trips to community facilities, including medical appointments. There is a transit alternative to reach many destinations within the Manhattan CBD, including local buses that stop within a block or two of most destinations. People over the age of 65 with a qualifying disability receive a reduced fare on MTA subways and buses, and elderly individuals with a qualifying disability can also receive MTA's paratransit service, including taxis and FHVs operating on behalf of MTA to transport paratransit users.[33] Elderly people who drive to or from the Manhattan CBD and are low-income would be entitled to the same mitigations and enhancements proposed for younger low-income populations with the CBD Tolling Alternative (see **Chapter 17, "Environmental Justice"**). Other elderly individuals who drive to the Manhattan CBD would pay the full toll.

Elderly individuals would benefit from the travel-time and reliability improvements to bus service with the CBD Tolling Alternative, as bus passengers tend to be older than riders on other forms of transit, such as the subway and, as described above, bus passengers in the Manhattan CBD would benefit from travel-time savings due to the decrease in congestion.[34]

Persons with Disabilities

With the CBD Tolling Alternative, qualifying vehicles transporting people with disabilities would be exempt from the toll. As currently ***[defined]***, qualifying vehicles transporting persons with disabilities includes vehicles with government-issued disability license plates and fleet vehicles owned or operated by

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31 Data on mode of travel to work by age to the Manhattan CBD is not available. Data is available only to the county level.

32 FHWA. Status of the Nation's Highways, Bridges, and Transit Conditions & Performance, 23rd Edition. Chapter 3, "Travel." Last accessed March 21, 2022. https://www.fhwa.dot.gov/policy/23cpr/chap3.cfm#access-to-vehicles.

33 MTA has specific criteria to define qualifying individuals: https://new.mta.info/fares/reduced-fare and https://new.mta.info/accessibility/paratransit/how-to-apply-or-recertify-for-access-a-ride.

34 blog.tstc.org/2014/04/11/nyc-bus-riders-tend-to-be-older-and-poorer-than-subway-riders/.

organizations used exclusively to provide transportation to people with disabilities. Therefore, disabled people traveling by a qualifying vehicle to or within the Manhattan CBD would not be charged a toll. Access-A-Ride paratransit service, which provides public transportation for customers with disabilities or certain qualifying health conditions, would be also exempt from the toll. Some disabled people may rely on travel by nonqualifying vehicles to or within the Manhattan CBD. In that case, the CBD Tolling Alternative would increase the cost for disabled people using nonqualifying vehicles to travel to the Manhattan CBD. As noted earlier, some of the cost to use nonqualifying vehicles for nonemergency medical transportation may be covered by Medicaid in certain situations. As noted in Chapter 17, "Environmental Justice," and Chapter 18, "Agency Coordination and Public Participation," members of the public raised the increased cost of travel for persons with disabilities in the Manhattan CBD as a concern during early public outreach conducted in fall 2021.

The CBD Tolling Alternative would provide benefits to improve paratransit services, such as reduced roadway congestion and travel-time improvements, which would benefit persons with disabilities.

Given the exemption from the toll for qualifying vehicles and the transit and paratransit service improvements, the CBD Tolling Alternative would not adversely affect persons with disabilities.

Transit-Dependent Populations and Nondriver Populations

The CBD Tolling Alternative would benefit transit users in the region, and transit-dependent populations in particular, by creating a new funding source for MTA's 2020–2024 Capital Program and subsequent programs. As described earlier, the CBD Tolling Alternative would result in a mode shift to transit across the region, but this mode shift would not result in adverse effects to the capacity of transit services serving the Manhattan CBD (refer to Subchapter 4C, "Transportation: Transit"). Furthermore, the CBD Tolling Alternative would not have unmitigated adverse effects on pedestrian facilities (such as sidewalks and crosswalks) that nondriver populations may rely on, and would result in safety benefits for pedestrians and bicyclists as described earlier. Therefore, potential transit ridership increases due to the CBD Tolling Alternative would not adversely affect transit-dependent populations or nondriver populations.

5A.4.2.5 ACCESS TO EMPLOYMENT

This subsection evaluates the effects of the new CBD toll on access to employment, including for people who travel from elsewhere to jobs in the Manhattan CBD and for residents of the Manhattan CBD who travel to jobs outside the Manhattan CBD.

Changes to Daily Work Journeys to the Manhattan CBD

Table 5A-6 and Table 5A-7 present the number of daily work journeys into the Manhattan CBD from each of the counties in the regional study area for each tolling scenario in comparison to the No Action Alternative. As shown, while the total number of daily work journeys would remain essentially the same (because the number of jobs would be unchanged; the small differences in total journeys are due to rounding in the model results), the distribution of the journeys would change with implementation of the CBD Tolling Alternative.

The CBD Tolling Alternative would result in small shifts in the place of origin for employees with jobs in the Manhattan CBD. More employees would come from New Jersey (a 1.3 to 2.9 percent increase, depending on the tolling scenario), Staten Island (a 2.3 to 3.7 percent increase depending on the tolling scenario), and Long Island (a 1.4 to 2.6 percent increase, depending on the tolling scenario). Fewer employees would come from New York counties north of New York City, with a decrease of 1.7 percent under Tolling Scenario A (a decrease of approximately 1,800 work journeys); Queens, with a decrease of 1.5 percent under Tolling Scenario F (decrease of approximately 3,800 work journeys); the Bronx (a decrease of 1.4 percent under Scenario E); and Brooklyn (a decrease of 1.2 percent under Tolling Scenario E). The largest percentage decrease in daily work journeys to the Manhattan CBD would occur from Connecticut, with a decrease of 2 percent under Tolling Scenario E (a decrease of approximately 1,100 work journeys). These decreases indicate a decrease in jobs held at locations inside the Manhattan CBD by residents of the Bronx, Brooklyn, and Queens; New York counties north of New York City; and Connecticut.

Change in Daily Work Journeys to Non-CBD Locations

Table 5A-8 and Table 5A-9 show the projected change in daily work journeys to locations outside the Manhattan CBD for each county in the regional study area for each tolling scenario. Similar to the work journeys to the Manhattan CBD discussed above, the total number of daily work journeys to non-CBD locations would remain essentially the same (because the number of jobs would be unchanged; the small differences in total journeys are due to rounding in the model results), the distribution of the journeys would change with implementation of the CBD Tolling Alternative.

As shown, the modeling predicts that the number of Manhattan CBD residents who work outside the Manhattan CBD would decrease by up to 2.2 percent under the tolling scenario with the largest decrease (Tolling Scenario E, with a decrease of approximately 800 daily journeys). Specifically, with the No Action Alternative and all tolling scenarios of the CBD Tolling Alternative, approximately 37,000 daily work journeys would originate in the Manhattan CBD bound for locations outside the Manhattan CBD, compared to approximately 165,000 daily work journeys that would originate in the Manhattan CBD and remain there (see Table 5A-6). The reduction under Tolling Scenario E could be due to residents of the Manhattan CBD taking jobs within the Manhattan CBD vacated by non-Manhattan CBD residents who were working in the Manhattan CBD, but who took jobs outside of the Manhattan CBD to avoid the toll.

Table 5A-6. Daily Work Journeys into Manhattan CBD by County of Origin (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
New York City	**1,008,469**	**1,004,181**	**1,003,479**	**1,002,771**	**1,001,411**	**1,000,751**	**1,001,246**	**1,002,600**
Bronx	97,518	96,911	96,821	96,598	96,359	96,172	96,741	96,409
Kings (Brooklyn)	282,439	280,663	280,595	279,906	279,684	279,165	280,197	280,463
New York (Manhattan)	340,690	339,782	340,032	339,874	340,036	340,401	339,459	339,300
Inside Manhattan CBD[1]	164,814	165,096	164,894	165,304	165,480	165,649	165,289	165,093
Outside Manhattan CBD	175,876	174,686	175,138	174,570	174,556	174,752	174,170	174,207
Queens	260,444	258,756	257,996	257,996	257,335	256,897	256,624	258,367
Richmond (Staten Island)	27,378	28,069	28,035	28,397	27,997	28,116	28,225	28,061
Long Island Counties[2]	**128,802**	**131,412**	**131,993**	**131,253**	**131,272**	**131,777**	**130,636**	**132,202**
New York Counties North of New York City[3]	**101,745**	**99,988**	**100,411**	**100,742**	**100,272**	**100,014**	**100,247**	**100,347**
New Jersey Counties[4]	**264,412**	**268,175**	**267,738**	**269,024**	**271,000**	**272,034**	**271,413**	**269,303**
Connecticut Counties[5]	**57,639**	**57,274**	**57,394**	**57,303**	**57,085**	**56,505**	**57,517**	**56,565**
TOTAL	**1,561,067**	**1,561,030**	**1,561,015**	**1,561,093**	**1,561,040**	**1,561,081**	**1,561,059**	**1,561,017**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Table 5A-7. Change in Daily Work Journeys into Manhattan CBD Compared to No Action Alternative (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	SCENARIO A		SCENARIO B		SCENARIO C		SCENARIO D		SCENARIO E		SCENARIO F		SCENARIO G	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
New York City	**-4,288**	**-0.4%**	**-4,990**	**-0.5%**	**-5,698**	**-0.6%**	**-7,058**	**-0.7%**	**-7,718**	**-0.8%**	**-7,223**	**-0.7%**	**-5,869**	**-0.6%**
Bronx	-607	-0.6%	-697	-0.7%	-920	-0.9%	-1,159	-1.2%	-1,346	-1.4%	-777	-0.8%	-1,109	-1.1%
Kings (Brooklyn)	-1,776	-0.6%	-1,844	-0.7%	-2,533	-0.9%	-2,755	-1.0%	-3,274	-1.2%	-2,242	-0.8%	-1,976	-0.7%
New York (Manhattan)	-908	-0.3%	-658	-0.2%	-816	-0.2%	-654	-0.2%	-289	-0.1%	-1,231	-0.4%	-1,390	-0.4%
Manhattan CBD[1]	282	0.2%	80	0.0%	490	0.3%	666	0.4%	835	0.5%	475	0.3%	279	0.2%
Outside Manhattan CBD	-1,190	-0.7%	-738	-0.4%	-1,306	-0.7%	-1,320	-0.8%	-1,124	-0.6%	-1,706	-1.0%	-1,669	-0.9%
Queens	-1,688	-0.6%	-2,448	-0.9%	-2,448	-0.9%	-3,109	-1.2%	-3,547	-1.4%	-3,820	-1.5%	-2,077	-0.8%
Richmond (Staten Island)	691	2.5%	657	2.4%	1,019	3.7%	619	2.3%	738	2.7%	847	3.1%	683	2.5%
Long Island Counties[2]	**2,610**	**2.0%**	**3,191**	**2.5%**	**2,451**	**1.9%**	**2,470**	**1.9%**	**2,975**	**2.3%**	**1,834**	**1.4%**	**3,400**	**2.6%**
New York Counties North of New York City[3]	**-1,757**	**-1.7%**	**-1,334**	**-1.3%**	**-1,003**	**-1.0%**	**-1,473**	**-1.4%**	**-1,731**	**-1.7%**	**-1,498**	**-1.5%**	**-1,398**	**-1.4%**
New Jersey Counties[4]	**3,763**	**1.4%**	**3,326**	**1.3%**	**4,612**	**1.7%**	**6,588**	**2.5%**	**7,622**	**2.9%**	**7,001**	**2.6%**	**4,891**	**1.8%**
Connecticut Counties[5]	**-365**	**-0.6%**	**-245**	**-0.4%**	**-336**	**-0.6%**	**-554**	**-1.0%**	**-1,134**	**-2.0%**	**-122**	**-0.2%**	**-1,074**	**-1.9%**
TOTAL	**-37**	**0.0%**	**-52**	**0.0%**	**26**	**0.0%**	**-27**	**0.0%**	**14**	**0.0%**	**-8**	**0.0%**	**-50**	**0.0%**

Source: BPM, WSP 2021.

1 Journeys originating in the CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Table 5A-8. Daily Work Journeys to Non-CBD Locations by County of Origin (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
New York City	**1,807,303**	**1,811,591**	**1,812,293**	**1,813,001**	**1,814,361**	**1,815,021**	**1,814,526**	**1,813,172**
Bronx	320,338	320,945	321,035	321,258	321,497	321,684	321,115	321,447
Kings (Brooklyn)	587,782	589,558	589,626	590,315	590,537	591,056	590,024	589,758
New York (Manhattan)	154,301	155,209	154,959	155,117	154,955	154,590	155,532	155,691
Inside Manhattan CBD[1]	37,457	37,175	37,377	36,967	36,791	36,622	36,982	37,178
Outside Manhattan CBD	116,844	118,034	117,582	118,150	118,164	117,968	118,550	118,513
Queens	620,209	621,897	622,657	622,657	623,318	623,756	624,029	622,286
Richmond (Staten Island)	124,673	123,982	124,016	123,654	124,054	123,935	123,826	123,990
Long Island Counties[2]	**1,008,938**	**1,006,328**	**1,005,747**	**1,006,487**	**1,006,468**	**1,005,963**	**1,007,104**	**1,005,538**
New York Counties North of New York City[3]	**658,523**	**660,280**	**659,857**	**659,526**	**659,996**	**660,254**	**660,021**	**659,921**
New Jersey Counties[4]	**2,416,474**	**2,412,711**	**2,413,148**	**2,411,862**	**2,409,886**	**2,408,852**	**2,409,473**	**2,411,583**
Connecticut Counties[5]	**644,072**	**644,437**	**644,317**	**644,408**	**644,626**	**645,206**	**644,194**	**645,146**
TOTAL	**6,535,310**	**6,535,347**	**6,535,362**	**6,535,284**	**6,535,337**	**6,535,296**	**6,535,318**	**6,535,360**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Table 5A-9. Change in Daily Work Journeys to Non-CBD Locations Compared to No Action Alternative (2023, All Modes)

ORIGIN GEOGRAPHIC AREA	SCENARIO A		SCENARIO B		SCENARIO C		SCENARIO D		SCENARIO E		SCENARIO F		SCENARIO G	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
New York City	**4,288**	**0.2%**	**4,990**	**0.3%**	**5,698**	**0.3%**	**7,058**	**0.4%**	**7,718**	**0.4%**	**7,223**	**0.4%**	**5,869**	**0.3%**
Bronx	607	0.2%	697	0.2%	920	0.3%	1,159	0.4%	1,346	0.4%	777	0.2%	1,109	0.3%
Kings (Brooklyn)	1,776	0.3%	1,844	0.3%	2,533	0.4%	2,755	0.5%	3,274	0.6%	2,242	0.4%	1,976	0.3%
New York (Manhattan)	908	0.6%	658	0.4%	816	0.5%	654	0.4%	289	0.2%	1,231	0.8%	1,390	0.9%
Inside Manhattan CBD[1]	-282	-0.8%	-80	-0.2%	-490	-1.3%	-666	-1.8%	-835	-2.2%	-475	-1.3%	-279	-0.7%
Outside Manhattan CBD	1,190	1.0%	738	0.6%	1,306	1.1%	1,320	1.1%	1,124	1.0%	1,706	1.5%	1,669	1.4%
Queens	1,688	0.3%	2,448	0.4%	2,448	0.4%	3,109	0.5%	3,547	0.6%	3,820	0.6%	2,077	0.3%
Richmond (Staten Island)	-691	-0.6%	-657	-0.5%	-1,019	-0.8%	-619	-0.5%	-738	-0.6%	-847	-0.7%	-683	-0.5%
Long Island Counties[2]	**-2,610**	**-0.3%**	**-3,191**	**-0.3%**	**-2,451**	**-0.2%**	**-2,470**	**-0.2%**	**-2,975**	**-0.3%**	**-1,834**	**-0.2%**	**-3,400**	**-0.3%**
New York Counties North of New York City[3]	**1,757**	**0.3%**	**1,334**	**0.2%**	**1,003**	**0.2%**	**1,473**	**0.2%**	**1,731**	**0.3%**	**1,498**	**0.2%**	**1,398**	**0.2%**
New Jersey Counties[4]	**-3,763**	**-0.2%**	**-3,326**	**-0.1%**	**-4,612**	**-0.2%**	**-6,588**	**-0.3%**	**-7,622**	**-0.3%**	**-7,001**	**-0.3%**	**-4,891**	**-0.2%**
Connecticut Counties[5]	**365**	**0.1%**	**245**	**0.0%**	**336**	**0.1%**	**554**	**0.1%**	**1,134**	**0.2%**	**122**	**0.0%**	**1,074**	**0.2%**
TOTAL	**37**	**0.0%**	**52**	**0.0%**	**-26**	**0.0%**	**27**	**0.0%**	**-14**	**0.0%**	**8**	**0.0%**	**50**	**0.0%**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Work journeys originating in Manhattan north of 60th Street and bound for locations other than the Manhattan CBD would increase by approximately 1 percent compared to the No Action Alternative under all tolling scenarios. Similarly, work journeys from Brooklyn, Queens, and the Bronx to non-CBD locations would increase slightly under all tolling scenarios compared to the No Action Alternative. As noted previously, the BPM assumes regional employment would stay the same under the No Action Alternative and the CBD Tolling Alternative. Thus, the increases in work journeys to non-CBD locations from Manhattan north of 60th Street, Brooklyn, Queens, and the Bronx would directly offset (in terms of number of journeys) the decreases in work journeys to the Manhattan CBD shown in Table 5A-7. Likewise, the decreases in daily work journeys to locations outside of the Manhattan CBD originating in New Jersey or Long Island under each tolling scenario would be directly offset by the increases in work journeys to the Manhattan CBD shown in Table 5A-7.

Potential Effects on Access to Employment

Approximately 1.4 million daily work journeys would travel into the Manhattan CBD from outside the CBD under any tolling scenario (see Table 4A.2-10 in Appendix 4A.2, "Transportation: Travel Forecast Scenario Summaries and Detailed Tables," and approximately 17 percent of these work journeys would be by driving (either the drive alone, high-occupancy vehicle, or taxi/FHV modes) compared to approximately 18 percent under the No Action Alternative. Although the share of total work journeys by driving would be similar under the No Action Alternative and CBD Tolling Alternative, the number of work journeys by driving modes to and within the Manhattan CBD would decrease by 4 to 10 percent (or 11,800 to 27,000 fewer driving journeys), depending on the tolling scenario (see Table 6-23 in Chapter 6, "Economic Conditions"). Many of these workers, particularly those coming from other areas of New York City, would have transit access to the Manhattan CBD, but they might choose to drive despite the Manhattan CBD toll (for example, because they value the travel-time savings and convenience of driving, or they have work hours that are less conducive for transit).

As noted previously and shown in Figure 5A-3, a small portion of New York City does not have convenient access to faster transit modes (commuter rail, subway, or express bus/SBS bus service), although all of the city other than one neighborhood is within one-half mile of transit including local bus service. Approximately 5,200 people currently commute to the Manhattan CBD by car from these areas; as discussed previously, these car commuters are widely distributed throughout the city. For workers in these areas, some commuters could choose to drive instead to a transit hub if parking is available there (see Subchapter 4D, "Transportation: Parking"), and others could opt to use local bus service to access commuter rail, subway, or express bus/SBS service. As noted previously, the CBD Tolling Alternative would also result in beneficial effects from the reduction in VMT and enhanced mobility that would result from reduced congestion, which would potentially offset the negative effect of increasing the cost of driving to the Manhattan CBD.

In addition, with the CBD Tolling Alternative, some car commuters with destinations outside the Manhattan CBD who use routes that pass through the Manhattan CBD to their destinations might choose a different route to avoid the CBD toll. This routing decision would be based on consideration of the cost of the toll versus the cost of the alternative routing, which could be a longer distance or more time-consuming. These

commuters would still reach their destination and some drivers might use a different route than they do today. With the CBD Tolling Alternative, the number of work journeys to the Manhattan CBD originating from New Jersey and Long Island is projected to increase, and those bound for the Manhattan CBD from Brooklyn, Queens, the Bronx, and Manhattan outside the Manhattan CBD are projected to decrease. These decreases in work journeys to the Manhattan CBD are projected to be offset by increases in work journeys to non-CBD locations, which suggests that the CBD Tolling Alternative would result in small shifts in employment patterns (i.e., generally a change of 2 percent or less as shown in Table 5A-7). Furthermore, the regional study area has a dynamic economy with many employment opportunities across the region. Of the region's total employment of approximately 10.7 million jobs, 1.5 million are in the Manhattan CBD. This demonstrates that ample employment opportunities exist outside the Manhattan CBD for those who choose not to travel to the Manhattan CBD for work.

With respect to Manhattan CBD reverse commuters, the BPM results indicate that, in the aggregate, approximately 37,000 daily work journeys would originate in the Manhattan CBD bound for locations outside the Manhattan CBD with both the No Action Alternative and the CBD Tolling Alternative in all tolling scenarios, and approximately 31 percent to 33 percent of these work journeys (or 11,600 to 12,200) would be by the drive alone, high-occupancy vehicle, or taxi/FHV modes to places of work outside the Manhattan CBD under any tolling scenario, compared to 33 percent with the No Action Alternative. In the tolling scenario with the greatest change in work journeys made to places of work outside the Manhattan CBD (Tolling Scenario E, with a decrease of 835 journeys), the CBD Tolling Alternative would result in up to a 2.2 percent decrease in the number of work journeys from the Manhattan CBD to locations outside the Manhattan CBD compared to the No Action Alternative, which indicates a small effect on overall employment access for residents of the Manhattan CBD. This indicates the small likelihood that Manhattan CBD residents would change job locations from someplace outside the Manhattan CBD to a location within the Manhattan CBD because of the CBD Tolling Alternative. Most Manhattan CBD residents that currently work outside the Manhattan CBD would continue to do so as a result of the CBD Tolling Alternative.

Overall, the CBD Tolling Alternative would not adversely affect access to employment for residents of the regional study area and would not adversely affect social groups or population characteristics of the regional study area. Commuters who travel (by any mode) to, from, or within the Manhattan CBD to access employment would benefit from the reduced congestion resulting from the CBD Tolling Alternative. Furthermore, by creating a new funding source for the MTA 2020–2024 Capital Program and subsequent capital programs, the CBD Tolling Alternative would benefit commuters who use MTA transit services to access employment.

5A.5 CONCLUSION

Transportation users in the region would benefit from the CBD Tolling Alternative through travel-time savings, improved travel-time reliability, reduced vehicle operating costs, improved safety, reduced air pollutant emissions, and a predictable funding source for transit improvements. This would positively affect community connections and access to employment, education, healthcare, and recreation for residents.

All areas of New York City outside the Manhattan CBD have transit access to the Manhattan CBD and would not be isolated from community services or ties within the Manhattan CBD. Even with the robust transit accessibility between the Manhattan CBD, New York City, and the regional study area, however, some people would continue to drive to the Manhattan CBD with the new CBD toll in place. The costs incurred by individuals driving to the Manhattan CBD would vary widely, depending on individual circumstances and the specific tolling scenario. The greatest cost would be incurred by those who make frequent driving journeys to the Manhattan CBD during peak hours. Driving to and from the Manhattan CBD is already expensive given the very limited availability of free or low-cost parking and the cost of off-street parking or taxi/FHV fares, and it is likely that people who drive regularly have higher incomes. Individuals who drive less frequently would incur lower costs because of the toll. Since the majority of trips to and from the Manhattan CBD are made by transit, most people would not be affected, and community cohesion would not be adversely affected. *[The Project Sponsors have committed to a package of mitigation measures to address potential adverse effects on low-income drivers who have no reasonable alternatives to reach the Manhattan CBD, which are described in Chapter 17, "Environmental Justice."]*

The CBD Tolling Alternative does not require the acquisition of any private property or occupied structure and therefore would not result in direct residential displacement. Given the myriad of factors that influence real estate costs in the region, the new CBD toll would not have a substantial effect on housing values either in the Manhattan CBD or in other residential neighborhoods near transit. As a result, indirect displacement resulting from the CBD Tolling Alternative would not occur.

Throughout the region, most community facilities and services serve their individual communities and, as a result, the potential effects of the Project on local community facilities would be limited. Nonetheless, a variety of community facilities and services, such as food pantries and meal delivery services, religious facilities, cultural institutions, social service providers, and home healthcare providers, rely on vehicles to transport people, goods, services, supplies, or staff into and out of the Manhattan CBD. Community service providers that are not exempt from the toll and do not have other travel options would have to absorb the cost of the toll. Given the wide range of travel options other than driving, the cost for users to drive to community facilities and services would not constitute an adverse effect on community facilities and services. Workers at community facilities and services, such as teachers, police officers, or health care workers, who currently choose to commute by automobile to or from the Manhattan CBD would have a new cost that may or may not be reimbursed by their employer, but most of these workers have the option to switch from a personal vehicle to transit to their place of work.

The CBD Tolling Alternative would result in potential changes in traffic patterns, including potential increases in traffic at some location. The analysis concludes that neither the increases in delay at local intersections nor the increased volume on certain highway segments would adversely affect emergency response times.

The CBD Tolling Alternative would result in an additional cost to elderly individuals if they travel by auto to and from the Manhattan CBD. Some elderly people would shift to other modes to avoid the toll. Elderly people with a qualifying disability could receive reduced fares on MTA subways and buses or could qualify

for MTA paratransit services, which are exempt from the toll. Low-income elderly individuals would benefit from the mitigation measures and enhancements identified for low-income drivers in general.

With the CBD Tolling Alternative, qualifying vehicles transporting people with disabilities would be exempt from the toll, as would paratransit service. Some disabled people may rely on travel by nonqualifying vehicles to or within the Manhattan CBD, and in that case, the CBD Tolling Alternative would increase the cost for those disabled people.

The CBD Tolling Alternative would impose tolls on vehicles entering or remaining in the Manhattan CBD, which could affect individuals who currently drive to work. The number of work trips by driving modes to and within the Manhattan CBD would decrease with the Project, with an offsetting increase in transit travel. Those who continue to drive despite the CBD toll would do so based on the need or convenience of driving and would benefit from the reduced congestion in the Manhattan CBD. Some workers may also choose to forego their work trip to the Manhattan CBD and find other employment and other workers would choose to take on those jobs. The regional study area has a dynamic economy with many employment opportunities spread across the region. Overall, the CBD Tolling Alternative would not adversely affect access to employment for residents of the regional study area.

Table 5A-10 provides a summary of the effects of the CBD Tolling Alternative related to population characteristics and community cohesion.

Table 5A-10. Summary of Effects of the CBD Tolling Alternative on Population Characteristics and Community Cohesion

TOPIC	SUMMARY OF EFFECTS	EFFECT FOR ALL TOLLING SCENARIOS	POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
Benefits	Benefits in and near the Manhattan CBD	Benefits in and near the Manhattan CBD related to travel-time savings, improved travel-time reliability, reduced vehicle operating costs, improved safety, reduced air pollutant emissions, and predictable funding source for transit improvements. This would positively affect community connections and access to employment, education, healthcare, and recreation for residents.	No	**No mitigation needed.** Beneficial effects
Community Cohesion	Changes to travel patterns, including increased use of transit, resulting from new toll	Changes to travel patterns, including increased use of transit, as a result of the Project would not adversely affect community cohesion or make it more difficult for people to connect with others in their community, given the extensive transit network connecting to the Manhattan CBD and the small change in trips predicted.	No	**No mitigation needed.** No adverse effects. See **Chapter 17, "Environmental Justice,"** for mitigation related to increased costs for low-income drivers.
Indirect Displacement	No notable changes in socioeconomic conditions or cost of living so as to induce potential involuntary displacement of residents in the Manhattan CBD	The Project would not result in the potential for indirect (involuntary) residential displacement. It would not result in substantial changes to market conditions so as to lead to changes in housing prices, given that real estate values in the Manhattan CBD are already high and the many factors that affect each household's decisions about where to live. In addition, low-income residents of the CBD would not experience a notable increase in the cost of living as a result of the Project because of the lack of change in housing costs, the many housing units protected through New York's rent-control, rent-stabilization, and other similar programs, the tax credit available to CBD residents with incomes of up to $60,000, and the conclusion that the cost of goods would not increase as a result of the Project).	No	**No mitigation needed**. No adverse effects
Community Facilities and Services	Increased cost for community facilities and service providers in the Manhattan CBD, their employees who drive, and clientele who drive from outside the CBD	The Project would increase costs for community service providers that operate vehicles into and out of the Manhattan CBD and for people who travel by vehicle to community facilities and services in the Manhattan CBD, as well as residents of the CBD and employees of community facilities who use vehicles to travel to community facilities outside the CBD. Given the wide range of travel options other than driving, the cost for users to drive to community facilities and services would not constitute an adverse effect on community facilities and services.	No	**No mitigation needed**. No adverse effects

TOPIC	SUMMARY OF EFFECTS	EFFECT FOR ALL TOLLING SCENARIOS	POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
Effects on Vulnerable Social Groups	Benefits to vulnerable social groups from new funding for MTA Capital Program	The Project would benefit certain vulnerable social groups, including elderly populations, persons with disabilities, transit-dependent populations, and non-driver populations by creating a funding source for the MTA 2020–2024 Capital Program (and subsequent capital programs and by reducing congestion in the Manhattan CBD). Elderly individuals would benefit from the travel-time and reliability improvements to bus service with the CBD Tolling Alternative, as bus passengers tend to be older than riders on other forms of transit, such as the subway and, as described above, bus passengers in the Manhattan CBD would benefit from travel-time savings due to the decrease in congestion. People over the age of 65 with a qualifying disability receive a reduced fare on MTA subways and buses, and elderly individuals with a qualifying disability can also receive MTA's paratransit service, including taxis and FHVs operating on behalf of MTA to transport paratransit users. Elderly people with disabilities and low-income individuals who drive to the Manhattan CBD would be entitled to the same mitigation and enhancements proposed for low-income and disabled populations, in general (see Table 161). Other elderly individuals who drive to the Manhattan CBD would pay the toll.	No	**No mitigation needed**. No adverse effects
Access to Employment	Increased cost for small number of people who drive to work in the Manhattan CBD	Decrease in work trips by driving modes to and within the Manhattan CBD, with an offsetting increase in transit ridership. Those who would drive despite the CBD toll would do so based on the need or convenience of driving and would benefit from the reduced congestion in the Manhattan CBD. Negligible effect (less than 0.1%) on travel to employment within the Manhattan CBD and reverse-commuting from the CBD due to the wide range of transit options available and the small number of commuters who drive today.	No	**No mitigation needed.** No adverse effects

5B. Neighborhood Character

5B.1 INTRODUCTION

Neighborhood character is an amalgam of various character-defining features of an area. This subchapter describes the analysis of effects of implementing the CBD Tolling Alternative on neighborhood character, relying on the result of the traffic, transit, pedestrians and bicyclists, economic considerations, parklands, historic and cultural resources, visual resources, air quality, and noise analyses prepared for this EA.

5B.2 METHODOLOGY

5B.2.1 Framework for Neighborhood Character Analysis

Neighborhood character is the mix of the various elements that give neighborhoods their distinct personality, context, and feeling. Neighborhood character consists of the attributes, including social and economic characteristics, and assets that make a neighborhood unique and that establish a sense of place for residents, workers, and visitors. Changes in travel patterns can affect neighborhood character by resulting in a notable change in vehicular and/or pedestrian traffic in an area or a related change in vehicle noise or air quality, if that change in turn affects a defining feature of the area's neighborhood character.

Neighborhood character is distinct from community cohesion, which is the degree to which groups of people with shared attributes or affinities—such as cultural, religious, artistic, or activity-based communities—form and maintain communities that are not limited to any location or neighborhood. Project effects on community cohesion are discussed in Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion."

5B.2.2 Study Areas

This subchapter considers whether the CBD Tolling Alternative would affect neighborhood character at a local level by introducing changes in travel behavior that could in turn affect defining features of neighborhood character. The analysis considers the potential effects that would occur in neighborhoods where BPM results indicate that Project-related changes in travel behavior would occur: the Manhattan CBD; at and close to 60th Street; near neighborhood streets where vehicular traffic would increase because of the Project; and at transit hubs where vehicular and/or pedestrian activity would increase because of the Project. The study areas for this assessment include the following:

- **Manhattan CBD Study Area** – This study area includes the portion of Manhattan inclusive of and south of 60th Street from the Hudson River to the East River.[1]

[1] For the purposes of the analysis in this subchapter, the Manhattan CBD study area includes the West Side Highway/ Route 9A and the FDR Drive because these roadways are within and form part of the neighborhood context of the Manhattan CBD. However, vehicles that travel exclusively on these roadways would not be subject to the Manhattan CBD toll.

- **60th Street Manhattan CBD Boundary Study Area** – 60th Street is the only segment of the Manhattan CBD boundary that is adjacent to neighborhoods outside the Manhattan CBD (elsewhere, the boundary is defined by the Hudson and East Rivers and New York Harbor). Because a new toll would be implemented between neighborhoods where no toll exists today, an analysis of potential effects on the neighborhood character of this area is merited. This study area includes the section of Manhattan between 55th and 65th Streets from the Hudson River to the East River, overlapping with a portion of the Manhattan CBD study area. This study area at the border of the Manhattan CBD is included for consideration of changes in travel behavior that could occur near the edge of the Manhattan CBD following implementation of the CBD Tolling Alternative and their potential for localized effects on its neighborhood character.

  The study area is limited to five blocks on either side of the Manhattan CBD boundary because while changes in transportation activity near the 60th Street Manhattan CBD boundary could be spread out over a broader area, this analysis makes the conservative assumption that the changes would be more concentrated (and therefore more intense) in the five blocks on either side of 60th Street and could have the potential to adversely affect neighborhood character.

In addition to the two study areas described above, the following areas where changes in transportation activity would result from Project implementation were also considered. For the reasons explained below, there is no potential for Project implementation to adversely affect neighborhood character in these areas, and no further analysis of these study areas was warranted.

- **Neighborhood Streets and Highways Experiencing Increases in Traffic** – The CBD Tolling Alternative would result in an overall net reduction in auto journeys to and from the Manhattan CBD. Depending on the tolling scenario, certain local streets and highway segments are projected to experience increases in vehicle traffic from route diversions. (**Subchapter 4B, "Transportation: Highways and Local Intersections,"** identifies these local streets and highways.) The concern for neighborhood character on these neighborhood streets and highways is whether this increased vehicular traffic could substantively burden the roadways in a way that could affect defining features of neighborhood character.[2] As described in **Section 5B.4.3**, changes in neighborhood character in neighborhoods where local streets and highways would experience increased traffic are not anticipated; therefore, specific study areas were not defined for this analysis.

  Some neighborhoods near these neighborhood streets and highways have large concentrations of minority and/or low-income populations, collectively "environmental justice populations," who live in them. **Chapter 17, "Environmental Justice,"** describes these neighborhoods and evaluates the effects of the CBD Tolling Alternative on the environmental justice populations who live there.
- **Transit Hubs** – With the CBD Tolling Alternative, certain public transportation hubs would experience an increase in transit ridership as more travelers to and from the Manhattan CBD elect to take public transportation rather than personal transportation or taxis/FHVs to avoid the toll. (**Subchapter 4C,**

[2] This analysis relies on the impact determinations in **Subchapter 4B, "Transportation: Highways and Local Intersections,"** to determine whether roadways have been substantively burdened.

"Transportation: Transit," identifies the transit hubs.) The concern for neighborhood character at these transportation hubs is whether this increased travel activity could substantively burden[3] the roadways, parking facilities, and pedestrian elements in the immediate area of the transit hubs in a way that could affect defining features of neighborhood character, or whether the larger numbers of travelers accessing the transit hubs could cause changes in market forces near the transit hubs that could lead to displacement of businesses or residents in a way that would affect defining features of neighborhood character. As described in Section 5B.4.3, changes in neighborhood character near transit hubs are not anticipated; therefore, specific study areas were not defined for this analysis.

5B.3 AFFECTED ENVIRONMENT

This section describes the existing neighborhood character of each study area.

5B.3.1 Manhattan CBD Study Area

For the assessment in this subchapter, the Manhattan CBD study area is defined as the area of Manhattan south and inclusive of 60th Street. This area includes a heterogeneous mix of neighborhoods and serves as the economic hub of the New York City region (Figure 5B-1). This section broadly describes the character of the Manhattan CBD organized into three geographic areas—Lower Manhattan, Canal Street to 14th Street, and Midtown Manhattan north of 14th Street—following a traditional division of the Manhattan CBD into broad groupings of neighborhoods based on similarities in neighborhood character.

The Manhattan CBD has census block groups that house minority and low-income (collectively, "environmental justice") populations. Chapter 17, "Environmental Justice," evaluates the effects of the CBD Tolling Alternative on environmental justice populations.

LOWER MANHATTAN

Lower Manhattan is the southern portion of the Manhattan CBD study area from the tip of Manhattan north to Canal Street. This area includes neighborhoods such as the Financial District, Battery Park City, Chinatown, Tribeca, and Civic Center, and falls within Manhattan Community District 1 and a portion of Community District 3.[4] The area's built form is characterized by narrow streets in configurations that are not the typical Manhattan grid (e.g., the original colonial-era street configuration in the Financial District) and a varied mix of building forms that include low-rise, mid- to late-19th century buildings; turn-of-the-century and Art Deco skyscrapers; and tall, modern, brick and metal-and-glass skyscrapers, especially in the World Trade Center complex and Battery Park City. Land uses in the area include predominantly commercial and civic/government uses in the southernmost portions of Lower Manhattan, giving way to a more mixed-use, lower-density character with more residential, retail, open space, and light industrial uses

[3] This analysis relies on the impact determinations in Subchapter 4C, "Transportation: Transit," Subchapter 4D, "Transportation: Parking," and Subchapter 4E, "Transportation: Pedestrians and Bicycles," to determine whether roadways, parking facilities, and pedestrian elements have been substantively burdened.

[4] New York City is divided into 59 community districts, a division of local governance. Each district is represented by a community board, a group of up to 50 unsalaried members selected by the area's elected officials. Community boards serve an advisory role to address land use and community concerns within their districts and as a liaison between the public and the local government.

in the northern portions of Lower Manhattan. The area of Lower Manhattan south of Chambers Street has experienced a notable increase in residential use in recent decades, including conversion of prior office space into residential apartments. The Two Bridges neighborhood contains several public housing projects comprising thousands of affordable apartments.

Figure 5B-1. View of the Manhattan CBD Looking North to Midtown Manhattan from One World Trade Center

Source: Allison L. C. de Cerreño, 2022.

Lower Manhattan includes neighborhoods with notable environmental justice populations—Two Bridges and the portions of the Chinatown and the Lower East Side neighborhoods below Canal Street. **Chapter 17, "Environmental Justice," Section 17.5.2** provides more information on these neighborhoods.

Lower Manhattan contains the approaches and entrance ramps to four major river crossings: the Brooklyn Bridge, Manhattan Bridge, Holland Tunnel, and Hugh L. Carey Tunnel. Traffic is particularly heavy at the river crossing entrances and exits, and traffic is often congested due to the narrow streets and irregular street layout. Generally, pedestrian volumes are extremely heavy on weekdays (because of the area's worker population) and lighter on weekends. Several major transportation hubs are located in Lower Manhattan and provide service connections to and between the subway system, the Port Authority Trans-Hudson (PATH) system, and ferry services. These include the PATH World Trade Center terminal; Fulton

Center subway complex; and ferry terminals at Pier 11, Battery Park City, and Whitehall Street (Staten Island Ferry and Battery Maritime Building).

The defining features of neighborhood character for the Lower Manhattan portion of the Manhattan CBD study area include its wide mix of street configurations and building forms; its dominant patterns of commercial, civic/government, and residential uses; the presence of numerous large-scale transportation facilities linking the area to other parts of the city and region; high levels of vehicular and pedestrian traffic; and the high density of development and intensity of use that characterize its neighborhoods.

CANAL STREET TO 14TH STREET

From Canal Street to 14th Street, the overall character of the Manhattan CBD study area is low-rise (compared to Lower Manhattan and Midtown) and more mixed-use, with a greater concentration of residential uses. Neighborhoods in the area include the Lower East Side, East Village, West Village/Greenwich Village, Soho, Hudson Square, and Meatpacking District. The area falls within Manhattan Community District 2 and a portion of Community District 3. Land uses in this area include mid-rise and high-rise residential buildings, many with ground-floor retail; institutional uses such as museums, university buildings, public and private schools, and churches; and open spaces. Local retail is generally concentrated on the avenues and includes concentrations of restaurants, drinking establishments, coffee shops, grocery stores, and other service establishments such as laundromats. The blocks closest to the East River in the Lower East Side and East Village neighborhoods contain several public housing projects comprising thousands of affordable apartments. Compared to other areas of the Manhattan CBD, office space is less prevalent between Canal and 14th Streets, but there are areas of converted industrial lofts and factory spaces used for commercial purposes. The Williamsburg Bridge lands at Delancey Street in this area of Manhattan.

This part of Manhattan includes the East Village neighborhood and portions of the Chinatown and Lower East Side neighborhoods, which have notable concentrations of environmental justice populations. Chapter 17, "Environmental Justice," Section 17.5.2 provides additional information on these neighborhoods.

The defining features of neighborhood character for the Canal Street to 14th Street portion of the Manhattan CBD study area include its thoroughly mixed-use character, with a high concentration of residential uses, local retail, open spaces, and institutional uses; relatively lower building heights (compared to Lower Manhattan and Midtown); high levels of vehicular and pedestrian traffic; and a level of development and intensity of use that are lower than those of Lower Manhattan or Midtown—though still quite high compared to most parts of the region.

MIDTOWN MANHATTAN

North of 14th Street, the character of the Manhattan CBD study area transitions to the high-density commercial uses of Midtown. Neighborhoods in this area include Union Square, Chelsea, Midtown, Garment Center, Times Square, Hell's Kitchen/Clinton, Stuyvesant Town, Murray Hill, Kips Bay, and Sutton Place. Midtown Manhattan falls within Manhattan Community Districts 4, 5, and 6. Notably, given the predominantly north–south orientation of the subway system and arterial street network in this part of

Manhattan, the eastern and western sides of Midtown are notably distinct from each other in terms of neighborhood character.

Midtown Manhattan contains a dense mix of office and commercial uses, with notable concentrations of office use along Park and Sixth Avenues, near Penn Station New York, in Rockefeller Center, in Times Square, around Grand Central Terminal, and in the new Hudson Yards neighborhood (**Figure 5B-2**). Major transportation hubs—including Penn Station New York, Grand Central Terminal, the Lincoln Tunnel, the Port Authority Bus Terminal, Queens-Midtown Tunnel, the Ed Koch Queensboro Bridge, and the ferry terminals at East 34th Street and West 39th Street—serve Midtown, as do numerous subway lines and the PATH system.

Figure 5B-2. Morning Congestion and Traffic in Midtown Manhattan Looking South on Third Avenue (Summer 2022)

Source: MTA

Midtown Manhattan also includes substantial residential uses, generally located in the eastern and western portions of Midtown. For example, numerous high-rise apartment buildings line Second and First Avenues, while brownstones and tenement buildings are mainly on the side streets. Residential uses are also concentrated west of Sixth Avenue, particularly within the Hell's Kitchen/Clinton neighborhood, and south of West 34th Street. Several public housing complexes are spread throughout Midtown. Local retail tends to be concentrated along the avenues and consists of ground-floor restaurants, bars, and local goods and services.

In Midtown Manhattan, the Hell's Kitchen and Clinton neighborhoods have concentrations of environmental justice populations. **Chapter 17, "Environmental Justice," Section 17.5.2** provides additional information on these neighborhoods.

The defining features of neighborhood character for the Midtown portion of the Manhattan CBD study area include its dominant patterns of commercial and residential uses; the presence of numerous large-scale transportation facilities linking the area to other parts of the city and region; high levels of vehicular and pedestrian traffic; heavily visited tourist attractions such as Times Square and the Empire State Building; and the high density of development and intensity of use that characterize its neighborhoods.

SUMMARY

Taken together, the defining features of neighborhood character for the Manhattan CBD study area include the following:

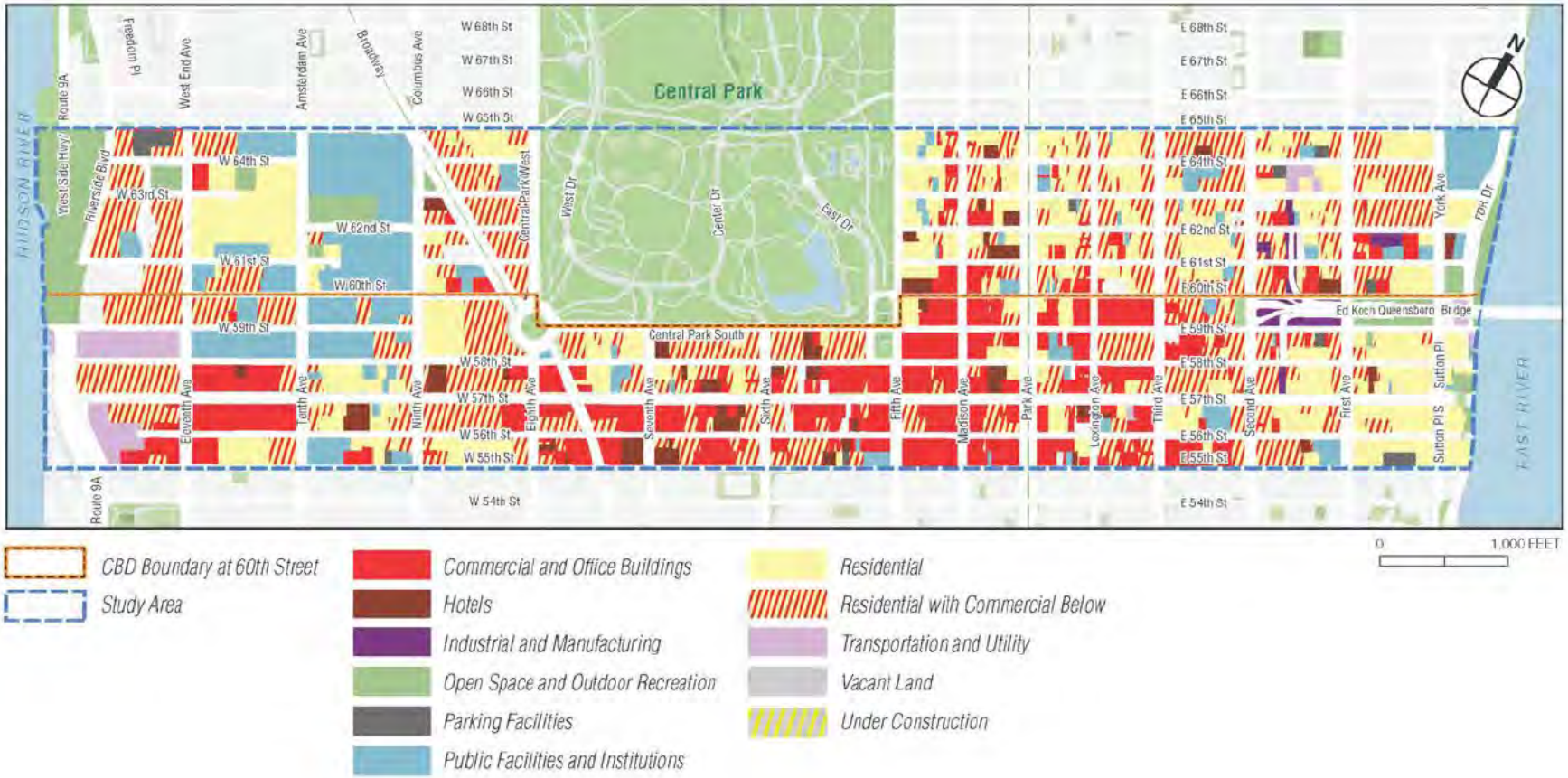
- Wide mix of street configurations (particularly in Lower Manhattan) and building forms, ranging from row houses to skyscrapers
- Established patterns of land use, with a heavy mix of uses across the Manhattan CBD and concentrations of different types of uses in certain neighborhoods
- The presence of numerous large-scale transportation facilities linking the Manhattan CBD study area to other parts of the city and region
- High levels of vehicular and pedestrian traffic
- Very high density of development and intensity of use (somewhat lesser between Canal and 14th Streets, and greater in Lower Manhattan and Midtown)

5B.3.2 60th Street Manhattan CBD Boundary Study Area

The 60th Street Manhattan CBD boundary study area includes the area between 55th and 65th Streets from the Hudson River to the East River (**Figure 5B-3**), which encompasses the boundary of the Manhattan CBD at 60th Street and the blocks to the immediate south and north of the boundary. This area is densely developed with a wide mix of uses and long-established land use patterns. The area has heavy vehicular and pedestrian traffic, with access to multiple subway and bus routes and high transit usage.

From 55th Street to 60th Street, the 60th Street Manhattan CBD boundary study area is part of the Manhattan CBD, and is a high-density district characterized by a mix of uses, including commercial and residential skyscrapers, retail districts, and large cultural and institutional facilities. The areas east of Second Avenue and west of Eighth Avenue are more residential in character, but still very densely developed with row houses and mid- and high-rise apartment buildings. Between 55th and 60th Streets, the 60th Street Manhattan CBD boundary study area is characterized by high pedestrian traffic throughout the day, and heavy vehicular traffic on all north–south roadways, along 57th Street and Central Park South, on the West Side Highway/Route 9A and the Franklin D. Roosevelt (FDR) Drive, and near the entrances and exits to the Ed Koch Queensboro Bridge.

Figure 5B-3. 60th Street Manhattan CBD Boundary Study Area (Manhattan from 55th Street to 65th Street)



Sources: New York City Department of City Planning, BYTES of the BIG APPLE, https://www1.nyc.gov/site/planning/data-maps/open-data.page.
ArcGIS Online, https://www.arcgis.com/index.html. January 2022.

[Note: For an audio description, please go to the following link: https://www.youtube.com/watch?v=W_apPTDwDX0&list=PLZHkn788ZQJPEY5zv-dr2gzkzMQFMgb_2&index=5.]

From 60th Street to 65th Street, the 60th Street Manhattan CBD boundary study area includes the densely developed east and west sides of Manhattan and the southern portion of Central Park. The east and west sides of Manhattan are high-density districts containing residential, commercial, cultural, and institutional uses. Residential uses include a mix of forms including row houses, mid- and high-rise apartment buildings, and residential skyscrapers. Neighborhood commercial corridors are along most north–south avenues. Streets in this area are characterized by heavy use due to the neighborhood's density and its proximity to the Manhattan CBD. There is heavy vehicular traffic on north–south avenues and on the east–west side streets in the eastern portion of the area, which provide access to the Ed Koch Queensboro Bridge and the FDR Drive. At the northern edge of the area, 65th Street is more heavily trafficked, because it provides eastbound vehicular access across Central Park between the Upper West Side and Upper East Side neighborhoods via the 65th Street transverse. (66th Street, just outside the 60th Street Manhattan CBD boundary study area, provides westbound access across Central Park and is also heavily trafficked). Pedestrian traffic is also heavy throughout the area, although less so on side streets.

While there are on-street, curbside parking spaces on most streets in the 60th Street Manhattan CBD boundary study area, on-street spaces are generally not a reliable source of parking and finding available parking spaces that are not already occupied can involve substantial time searching for an available space. Much of this parking is metered, and New York City on-street parking regulations are complex, with variable time-of-day and day-of-week regulations applying to any given space, which limits the reliable supply of available on-street parking spaces at any given time. For example, on-street parking throughout New York City, including in the 60th Street Manhattan CBD boundary study area, is subject to the city's alternate-side parking regulations, which require vehicles to be moved during the week to facilitate street cleaning. At other locations, parking is metered during certain hours with a limited length of stay, and drivers must renew the charge to park or get ticketed for violating parking regulations. At other locations, parking is restricted during peak commuter hours to provide additional moving lanes but is allowed during other times. Each of these regulations increases the complexity of finding a parking space that is reliably available for the entire duration during which an individual needs to park their car.

New York City policy does not protect or prioritize on-street parking in this section of Manhattan; in fact, the City of New York has implemented several policies and programs that promote repurposing on-street parking spaces for other uses, which has reduced the number of on-street parking spaces over time. These include the NYCDOT's bike-share program, which places bike-share docking stations in former on-street parking spaces, and the Open Restaurants program, which allows restaurants and other food-service establishments to convert on-street parking spaces to customer seating. The small percentage of residents of the 60th Street Manhattan CBD boundary study area who have vehicles (approximately 74 percent of 60th Street Manhattan CBD boundary study area households do not have a vehicle[5]) either park their vehicles in curbside spaces despite these challenges or use private off-street garages, often paying monthly. Public rates for monthly parking spaces (as opposed to preferential rates for residents of the building where the garage is located) range from approximately $400 per month to over $1,000 per month;[6] in general,

[5] U.S. Census Bureau, American Community Survey 5-Year Estimates, 2015–2019. Data are for the 21 census tracts that are closest to the 60th Street Manhattan CBD boundary study area (including Manhattan Census Tracts 106.01, 106.02, 108.01, 108.02, 108.03, 110, 112.01, 112.02, 112.03, 114.01, 114.02, 120, 122, 135.02, 137, 139, 145, 147, 149, 151.01, 151.02). In this area, 73.7 percent of households have no vehicles available; the margin of error is 2.0 percent.

[6] spothero.com.

higher pricing corresponds with greater proximity to major destinations, as well as added features such as valet service. Typically, given the low vehicle ownership rates in this area, the challenges in finding available parking spaces in the 60th Street Manhattan CBD boundary study area and the dense, walkable nature of the area, as in the rest of Manhattan, most residents do not drive a vehicle for errands and shopping as they might outside the city. For example, modal split data prepared for the Greater East Midtown Rezoning (covering an area just south of the 60th Street Manhattan CBD boundary study area that is comparable in terms of land use and transportation patterns) showed that 83 percent of trips to local retail destinations were walk trips, and 12 percent of local retail trips were made via public transportation (subway or bus); only 5 percent of these trips were made via automobile (2 percent by private auto, and 3 percent by taxi/FHV).[7]

The southern portion of Central Park is very different in character from the other areas of the 60th Street Manhattan CBD boundary study area, as it is part of a large (840-acre), landscaped city park. The section of Central Park within the 60th Street Manhattan CBD boundary study area is heavily used and has a variety of active and passive recreation areas. Other than the transverse roadways that cross the park, roadways in Central Park are closed to vehicular traffic other than authorized vehicles, and these roadways are heavily used by bicyclists, runners, and walkers, as well as recreational horse carriages. Throughout the southern part of Central Park, the tall buildings of the surrounding neighborhoods are visible and visually delimit the edges of the park. The park serves as an important public open space for residents, workers, and visitors from the adjacent neighborhoods. **Chapter 7, "Parks and Recreational Resources,"** provides more information about Central Park.

The defining features of neighborhood character for the 60th Street Manhattan CBD boundary study area include the following:

- Heavily mixed-use nature and established patterns of office, retail, residential, cultural, institutional, and open space uses
- High density of development
- High levels of vehicular and pedestrian traffic and transit use
- Highly walkable nature
- Contrast provided by the large open expanse of the southernmost portion of Central Park

5B.4 ENVIRONMENTAL CONSEQUENCES

5B.4.1 No Action Alternative

The No Action Alternative would not implement a vehicular tolling program with its associated tolling infrastructure. New York Metropolitan Transportation Council (NYMTC) socioeconomic and demographic forecasts and BPM modeling conducted for this Project show that between the 2023 build year and the 2045 future analysis year and in the absence of Project implementation, population would experience

[7] New York City Department of City Planning. May 2017. *Greater East Midtown Rezoning Final Environmental Impact Statement*, Chapter 12, "Transportation," Table 12.4 Transportation Planning Factors.

modest background growth, with corresponding increases in roadway traffic and transit ridership (see Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling," for further detail). The neighborhood character of the Manhattan CBD study area and the 60th Street Manhattan CBD boundary study area would be similar to existing conditions.

5B.4.2 CBD Tolling Alternative

This section describes the potential effects of the CBD Tolling Alternative (all tolling scenarios) on neighborhood character.[8] CEQR guidance for neighborhood character analyses notes that neighborhood character is an amalgam of various character-defining features, and when a defining feature of neighborhood character would be adversely affected, this would in turn adversely affect neighborhood character overall. Travel patterns help give neighborhoods their distinct personality, context, and feeling, and thus are a component of neighborhood character. This section presents potential beneficial and adverse effects on defining features of neighborhood character resulting from implementation of the CBD Tolling Alternative.

MANHATTAN CBD STUDY AREA

As described in Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling," the CBD Tolling Alternative would reduce VMT in the Manhattan CBD study area, although VMT reductions would not be evenly spread across the Manhattan CBD, and certain roadways would experience increased VMT due to route diversions. Overall, reduced VMT in the Manhattan CBD would reduce associated pollutant emissions and improve travel times and travel-time reliability. Even in locations where traffic would increase, the Project would not adversely affect air quality (see Chapter 10, "Air Quality") or noise (see Chapter 12, "Noise"). Therefore, there would be no potential for changes in air quality or noise to adversely affect defining features of neighborhood character. Beneficial Project effects to air quality and noise at the local scale would be limited and would not affect defining features of neighborhood character.

As described in Section 5B.3.1, the defining features of neighborhood character in the Manhattan CBD study area include the following:

- Wide mix of street configurations (particularly in Lower Manhattan) and building forms, ranging from row houses to skyscrapers
- Established patterns of land use, with a heavy mix of uses across the Manhattan CBD and concentrations of different types of uses in certain neighborhoods
- The presence of numerous large-scale transportation facilities linking the Manhattan CBD study area to other parts of the city and region
- High levels of vehicular and pedestrian traffic
- Very high density of development and intensity of use (somewhat lesser between Canal and 14th Streets, and greater in Lower Manhattan and Midtown)

[8] See Chapter 2, "Project Alternatives," for information on the tolling scenarios.

Potential concerns for neighborhood character in the Manhattan CBD study area due to implementation of the CBD Tolling Alternative relate to whether changes in the number of people accessing the Manhattan CBD and economic effects on specific industries would have the potential to affect defining features of neighborhood character.

Changes in the Number of People Accessing the Manhattan CBD

As described in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling,"** BPM results indicate that despite congestion reductions resulting from the Project, due to people shifting to other modes the overall number of daily journeys by all modes to, from, and within the Manhattan CBD study area would not change substantially because of the Project. The BPM has a limited ability to predict trip cancellation, and it is likely that some additional trips to the Manhattan CBD beyond those projected by the BPM would be canceled due to the implementation of the Project. **Subchapter 4A** notes that experience from similar program implementations in London and Stockholm shows that while some trip cancellation would occur, it would be a relatively small percentage of overall drivers accessing the Manhattan CBD (less than 3 percent in London and up to approximately 11 percent in Stockholm). Because only approximately 20 percent of all Manhattan CBD-related journeys are made by auto, cancellation of a small percentage of auto trips would not result in a significant decrease in total journeys by all modes. For example, in 2023 under Tolling Scenario B (the scenario with the highest number of Daily Manhattan CBD-related vehicle person- journeys, per **Table 4A-9** in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"**), if 11 percent of those journeys were cancelled altogether, this would result in a decline of 50,329 total CBD-related journeys; if 3 percent of those journeys were cancelled altogether, this would result in a decline of 13,726 total CBD-related journeys. In the context of the approximately 2.8 million total daily journeys to the Manhattan CBD in 2023 (see **Table 5A-2** in **Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion,"**), this represents a small fraction of total journeys to the Manhattan CBD. With this small reduction in the overall number of people accessing the Manhattan CBD study area daily, the high levels of vehicular and pedestrian traffic, high density of development and intensity of use, and the prominence of large-scale transportation facilities that are defining characteristics of neighborhood character in the Manhattan CBD would not be affected. Therefore, the CBD Tolling Alternative would not adversely affect neighborhood character in the Manhattan CBD study area due to changes in the number of people accessing the Manhattan CBD.

As discussed in the previous paragraph, with the Project, pedestrian traffic in this area would likely increase due to mode shift away from automobiles, which could benefit land uses that rely on high levels of pedestrian traffic, particularly retail uses. This would reinforce the established patterns of land use, heavy mixing of uses, and the very high density of development and intensity of use that are defining features of neighborhood character in the Manhattan CBD study area.

Economic Effects on Specific Industries

As noted in **Chapter 18, "Agency Coordination and Public Outreach,"** members of the public raised Project effects on small businesses as a concern during early public outreach conducted in fall 2021. **Chapter 6, "Economic Conditions,"** concludes that changes in travel patterns brought on by the CBD Tolling Alternative would not adversely affect any particular industry or occupational category in the Manhattan CBD,

including small businesses. The analysis also indicates no adverse changes to commercial traffic providing goods and services to the Manhattan CBD.

Therefore, economic effects on specific industries resulting from the CBD Tolling Alternative would not adversely affect the established land use patterns and mixing of uses that are defining features of neighborhood character in the Manhattan CBD study area.

As discussed above, with the Project, pedestrian traffic in this area would likely increase, which could benefit specific industries that rely on high levels of pedestrian traffic, particularly retail businesses. This would reinforce the established patterns of land use, heavy mixing of uses, and the very high density of development and intensity of use that are defining features of neighborhood character in the Manhattan CBD study area.

60TH STREET MANHATTAN CBD BOUNDARY STUDY AREA

As described in Section 5B.3.2, the defining features of neighborhood character in the 60th Street Manhattan CBD boundary study area include the following:

- Heavily mixed-use nature and established patterns of office, retail, residential, cultural, institutional, and open space uses
- High density of development
- High levels of vehicular and pedestrian traffic and transit use
- Highly walkable nature
- Contrast provided by the large open expanse of the southernmost portion of Central Park

Concerns for neighborhood character in the 60th Street Manhattan CBD boundary study area because of implementation of the CBD Tolling Alternative relate to whether changes in driving behavior, changes in access to parking, economic effects of changes in travel patterns, and effects on Central Park would have the potential to affect defining features of neighborhood character.

Changes in Driving Behavior and Access to Parking

As described in Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling," BPM results for all tolling scenarios indicate that with the CBD Tolling Alternative, roadway traffic would generally decrease across the 60th Street Manhattan CBD boundary study area; however, traffic would increase on certain streets due to route diversions, particularly in the eastern portion of the 60th Street Manhattan CBD boundary study area near the Ed Koch Queensboro Bridge. The volume of vehicular traffic on each of the avenues immediately north of 60th Street would decrease under all tolling scenarios. As noted in Chapter 18, "Agency Coordination and Public Outreach," members of the public raised concerns about high levels of congestion near cultural institutions in the Upper West Side portion of the 60th Street Manhattan CBD boundary study area during early public outreach conducted in the fall of 2021; as this area is located immediately north of 60th Street, BPM results described above indicate that the Project would improve the traffic situation in this area. The drop in vehicular traffic along the avenues north of 60th Street

described above also suggests that the demand for parking in those neighborhoods would not increase. However, members of the public have expressed concern that after implementation of the CBD Tolling Alternative, taxi/FHV drop-offs would increase just north of 60th Street and demand for the existing, limited supply of on-street parking north of 60th Street could increase, as people seek to avoid crossing the Manhattan CBD boundary in a vehicle and paying the toll. However, this is unlikely to occur given the difficulty in finding an available parking space in this area (see discussion in Section 5B.3.2). On-street parking is generally not a reliable source of parking in the 60th Street Manhattan CBD boundary study area. To have a reliable source of parking, commuters and other drivers who routinely access the Manhattan CBD from the north would likely seek a monthly space in a parking lot or garage; as discussed in Section 5B.3.2, costs for monthly spaces in this area range from approximately $400 to over $1,000 per month, which would offset the benefit of avoiding the toll. If any increase in parking demand or taxi/FHV drop-offs does occur in this area, it would likely decrease over time as people adjust their travel patterns to account for the toll. Particularly for those driving their personal vehicles, the complexity and wasted time associated with finding parking in this area would likely deter long-term shifts to parking just north of the 60th Street Manhattan CBD boundary. Any increase in demand for on-street parking would not affect most neighborhood residents, who are not likely to rely on on-street parking for their regular parking needs. It should be noted that ready access to on-street parking spaces is not a defining feature of neighborhood character in this area, and any limited changes to on-street parking availability that may occur as a result of Project implementation would therefore not have the potential to affect neighborhood character.

As described in Chapter 6, "Economic Conditions," Section 6.4.3.2, if an increase in demand for off-street parking were to occur just north of the 60th Street Manhattan CBD boundary, that demand would be accommodated through available capacity, or if there were capacity constraints, it would be offset through upward adjustments in parking fees; this would likely offset potential changes in parking behavior resulting from the CBD Tolling Alternative. Between 60th and 65th Streets, there are 7,525 off-street parking spaces in 52 parking facilities, which under typical conditions are at 70 to 80 percent occupancy.[9] Of these, 3,865 spaces in 34 parking facilities are located east of Central Park, and 3,660 spaces in 18 parking facilities are located west of Central Park. For additional detail, see Chapter 6, "Economic Conditions," Table 6-33. It is unlikely that new off-street parking capacity would be added just north of 60th Street because the area is built-out and lacks available sites, and a decades-long trend toward lower parking demand combined with high real estate values in this area further suggest that new parking garages would not be developed.

With the CBD Tolling Alternative, neighborhood residents who live on one side of the Manhattan CBD boundary and park on the other, and who elect not to switch to a parking space on the same side of the Manhattan CBD boundary, would need to pay the toll each time they drive to their residence. This could add complexity to certain activities for those individual residents, such as dropping off purchases at a residence after a shopping trip. However, as noted, most residents do not have vehicles, and among those

[9] Based on a sampling of parking utilization collected in 2018 and 2019 during typical conditions for environmental review studies, weekday midday off-street parking utilization generally ranges from approximately 70 to 80 percent of capacity, with lower utilization rates in the AM and PM peak periods. Applying this utilization estimate to the total off-street parking capacity between 60th and 65th Streets (7,525 spaces) equates to between 1,505 and 2,258 available off-street parking spaces.

who do, most do not drive their vehicles in connection with shopping trips in this way. In addition, the New York City zoning code and CEQR guidance do not prioritize such activities in this section of Manhattan. New York City zoning does not require most developments in the 60th Street Manhattan CBD boundary study area to include off-street parking, and CEQR guidance generally does not consider project parking shortfalls in the 60th Street Manhattan CBD boundary study area to constitute an adverse impact due to the wide availability of transit and other alternative modes of transportation.

Any changes in driving behavior and access to parking would not adversely affect the defining features of neighborhood character in the 60th Street Manhattan CBD boundary study area. Because new parking garages are not likely to be developed in the place of existing uses, there would be no change in the mixed-use nature, established land use patterns, and high development densities that are defining features of the area's neighborhood character. Any increase in demand for parking would not affect the defining features of neighborhood character in the 60th Street Manhattan CBD boundary study area, because ready access to parking is not a defining feature of neighborhood character in this area.

Economic Effects of Changes in Travel Patterns

While the reductions in roadway traffic with the CBD Tolling Alternative would reduce congestion in the neighborhood, the 60th Street Manhattan CBD boundary study area would continue to experience heavy vehicular traffic overall given its major activity centers and its connections to the Ed Koch Queensboro Bridge, a major East River crossing. Pedestrian traffic would likely increase, which could benefit retail businesses in the neighborhood. Because the CBD Tolling Alternative would not substantially change the overall number of people using the neighborhood, it would not result in changes to the land use patterns that contribute to the character of the 60th Street Manhattan CBD boundary study area. Existing businesses in the 60th Street Manhattan CBD boundary study area would not be adversely affected, except potentially for off-street parking garages, which are discussed in the next paragraph (see **Chapter 6, "Economic Conditions,"** for further discussion of existing businesses).

As described in **Chapter 6, "Economic Conditions,"** demand for off-street parking could decrease in the blocks south of 60th Street after implementation of the CBD Tolling Alternative. This could lead to the redevelopment of existing parking garages with new replacement uses over time. The high property values in the neighborhood combined with existing zoning would ensure that replacement uses would be consistent with the types of uses already prevalent in the area, such as high-density commercial, residential, and institutional uses.

Therefore, the economic effects of changes in travel patterns would not adversely affect the mixed-use nature, prevailing land use patterns, high densities, and highly walkable nature that are defining features of neighborhood character in this area.

Pedestrian traffic would likely increase in the 60th Street Manhattan CBD boundary study area, which could benefit retail businesses in the neighborhood, reinforcing the established patterns of land use that are a defining feature of the area's neighborhood character. Any redevelopment of existing parking garages could also benefit neighborhood character by introducing more active uses and higher densities that are more aligned with the defining features of the area's neighborhood character.

Effects on Central Park

Central Park is closed to vehicular traffic except for park deliveries or other drivers with permitted business in the park; therefore, there would be no increase in the small number of vehicles that use the park roadways. The CBD Tolling Alternative would not result in any adverse effects on Central Park, such as changes in the use of the park or any reduction in usable parkland. The CBD Tolling Alternative (all tolling scenarios) would result in reduced traffic volumes adjacent to Central Park on Fifth Avenue and Central Park West as well as reduced traffic volumes crossing the park using the park's sunken transverse roads, which would be considered a beneficial effect on the park (see **Chapter 7, "Parks and Recreational Resources"**). Thus, the CBD Tolling Alternative would not adversely affect the character of Central Park, which is a defining feature of neighborhood character in the 60th Street Manhattan CBD boundary study area, and would result in beneficial effects to the park.

NEIGHBORHOOD STREETS AND HIGHWAYS EXPERIENCING INCREASES IN TRAFFIC

Subchapter 4B, "Transportation: Highways and Local Intersections," provides analysis of highway segments and intersections in neighborhoods where changes in traffic would occur and concludes that with the implementation of standard traffic improvements, there would be no adverse traffic effects at local intersections. **Subchapter 4B** also concludes that through implementation of Transportation Demand Management measures, adverse traffic effects would be mitigated on highway segments where potentially adverse effects would result from increases in traffic volumes. As a result, with implementation of Transportation Demand Measures, there would be no substantial change to the overall operation or character of local streets or highways. Therefore, the CBD Tolling Alternative does not have the potential to alter neighborhood character near neighborhood streets or highways experiencing increases in traffic.

Many of the neighborhoods near these neighborhood streets and highways contain environmental justice populations. As noted in **Chapter 17, "Environmental Justice"** and **Chapter 18, "Agency Coordination and Public Outreach,"** during early public outreach conducted in the fall of 2021, members of the public raised concerns that traffic diversions to highways in Upper Manhattan and the Bronx with the CBD Tolling Alternative would adversely affect nearby neighborhoods with environmental justice populations, including by degrading air quality and increasing noise. Members of the public also voiced concerns about the effects of changes in traffic on the Lower East Side section of Lower Manhattan. **Section 17.6** provides a discussion of effects on environmental justice communities.

TRANSIT HUBS

As noted in **Section 5.B.2.2**, the concern for neighborhood character at transit hubs relates to whether increased travel activity resulting from the Project would substantively burden the roadways, parking facilities, and pedestrian elements in the immediate area of the transit hubs in a way that could affect defining features of neighborhood character, or whether the larger numbers of travelers accessing the transit hubs could cause changes in market forces near the transit hubs that could lead to displacement of businesses or residents in a way that would affect defining features of neighborhood character. **Subchapter 4C, "Transportation: Transit," Subchapter 4D, "Transportation: Parking,"** and **Subchapter 4E, "Transportation: Pedestrians and Bicycles,"** conclude that the CBD Tolling Alternative would increase ridership at many transit stations, but it would not result in adverse effects to the operations of transit

hubs. **Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion,"** concludes that the CBD Tolling Alternative would not result in adverse effects from indirect residential displacement near transit hubs. **Chapter 6, "Economic Conditions,"** concludes that the CBD Tolling Alternative does not have the potential to substantively alter market conditions in neighborhoods surrounding transportation hubs. Therefore, given that the Project would not result in any effects at transit hubs, the CBD Tolling Alternative does not have the potential to alter neighborhood character near transit hubs.

5B.5 CONCLUSION

Table 5B-1 summarizes the effects of the Project.

Table 5B-1. Summary of Effects of the CBD Tolling Alternative on Neighborhood Character

SUMMARY OF EFFECTS	EFFECT FOR ALL TOLLING SCENARIOS	POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
No notable change in neighborhood character, including in the Manhattan CBD, in the area close to the CBD boundary, and the rest of the 28-county area	The changes in traffic patterns on local streets are unlikely to change the defining elements of the neighborhood character of the Manhattan CBD.	No	**No mitigation needed.** No adverse effects
	Changes in parking demand near the 60th Street CBD boundary (including increases just north of 60th Street and decreases just to the south) would not create a climate of disinvestment that could lead to adverse effects on neighborhood character nor alter the defining elements of the neighborhood character of this area.	No	**No mitigation needed.** No adverse effects

The Manhattan CBD study area serves as the economic hub of the New York City region and includes a heterogeneous mix of neighborhoods. The CBD Tolling Alternative would decrease vehicular trips within most parts of the Manhattan CBD and increase transit, bicycle, and pedestrian trips near transit stations. Due to people shifting to other modes the Project-related changes in the number of people accessing the Manhattan CBD would not substantially change and would not noticeably affect the intensity of use of the Manhattan CBD study area. Changes in travel patterns brought on by the CBD Tolling Alternative would not adversely affect any particular industry in the Manhattan CBD. Pedestrian traffic in this area would likely increase due to mode shift away from automobiles, which would benefit land uses that rely on high levels of pedestrian traffic, particularly retail uses. This, in turn, would reinforce the established patterns of land use, heavy mixing of uses, and the very high density of development and intensity of use that are defining features of neighborhood character in the Manhattan CBD study area.

The 60th Street Manhattan CBD boundary study area is a high-density mixed-use district containing portions of several neighborhoods as well as a section of Central Park. The CBD Tolling Alternative would not result in any adverse effects on Central Park, and traffic reductions on certain roadways adjacent to and within the park would result in beneficial effects to the park. This study area would be affected by changes in driving behavior related to access to parking; in addition, implementation of a congestion toll at 60th Street would add complexity for those neighborhood residents who currently drive in the area for errands and other activities. However, because new parking garages are not likely to be developed in the place of existing uses, there would be no change in the mixed-use nature, established land use patterns,

and high development densities that are defining features of the area. Any increased complexity in finding parking would not affect the defining features of neighborhood character because ready access to parking is not a defining feature of neighborhood character in this area. For these reasons, the CBD Tolling Alternative would not adversely affect the 60th Street Manhattan CBD boundary study area.

The CBD Tolling Alternative would benefit neighborhood character in the 60th Street Manhattan CBD boundary study area. Pedestrian traffic would likely increase, which could benefit retail businesses in the neighborhood, reinforcing the established patterns of land use that are a defining feature of the area's neighborhood character. Any redevelopment of existing parking garages could also benefit neighborhood character by introducing more active uses and higher densities that are more aligned with the defining features of the area's neighborhood character.

Subchapter 4B, "Transportation: Highways and Local Intersections," concludes that with the implementation of standard traffic improvements, there would be no adverse traffic effects at local intersections. It also concludes that through implementation of Transportation Demand Measures, adverse traffic effects could be mitigated on highway segments where traffic volumes would increase. While the CBD Tolling Alternative would affect traffic operations on local streets and highways in neighborhoods near the Manhattan CBD, there would be no substantial change to the overall operation or character of these local streets or highways, including on emissions and noise (see Chapter 10, "Air Quality," and Chapter 12, "Noise"). Thus, there would be no potential for Project-related changes to local streets or highways to substantively alter the neighborhood character of the areas nearby.

Subchapter 4C, "Transportation: Transit," Subchapter 4D, "Transportation: Parking," and Subchapter 4E, "Transportation: Pedestrians and Bicycles," conclude that the CBD Tolling Alternative would not result in adverse effects to transportation conditions at transit hubs; Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion," concludes that the CBD Tolling Alternative would not result in adverse effects from indirect residential displacement near transit hubs; and Chapter 6, "Economic Conditions," concludes that the CBD Tolling Alternative does not have the potential to substantively alter market conditions in neighborhoods surrounding transportation hubs. Therefore, there would be no potential for Project-related changes to transportation, social, or economic conditions at transit hubs to substantively alter defining features of neighborhood character near these transit hubs.

5C. Public Policy

5C.1 INTRODUCTION

This subchapter assesses the consistency of the CBD Tolling Alternative with public policies enacted or adopted by governmental bodies from the regional study area that are applicable to major transportation initiatives such as the Project. A public policy is a plan or program enacted by a government body to achieve a stated goal.

5C.2 PUBLIC POLICIES APPLICABLE TO THE PROJECT

This section describes existing public policies that are applicable to the Project. Chapter 13, "Natural Resources," describes policies related to coastal zone management.

5C.2.1 OneNYC 2050: Building a Strong and Fair City, New York City's Strategic Plan

OneNYC 2050, New York City's strategic plan, includes initiatives related to the city's economic growth, sustainability, and resiliency.[1] New York City's plans for sustainable development address the need for reducing traffic congestion, improving air quality, and improving public transportation, among other goals. The City of New York plans to reduce congestion by implementing initiatives that include, but are not limited to, leveraging new technologies to enforce traffic laws; optimizing curb use by expanding bus and bike lanes, commercial loading/unloading zones, and curb safety designs; and addressing FHV congestion and vehicles circulating without passengers in the most congested parts of New York City (including driver incentives to reduce passenger circulation within the Manhattan CBD and using CBD tolling to limit cruising in and out of the Manhattan CBD).

The *OneNYC 2050* report notes that 67 percent of all trips in New York City in 2015 were made by taking public transit, walking, and bicycling—the highest of any large U.S. city. The report identifies the goal of increasing the transit, walking, and bicycling mode share to 80 percent of all trips by 2050, which requires reducing the share of trips taken by personal automobile from 31 percent to 16 percent. The initiatives identified to achieve that goal include, among others, implementing CBD tolling to reduce traffic.[2]

5C.2.2 Regional Transportation Plans

Transportation planning in metropolitan areas is guided by Federally mandated Metropolitan Planning Organizations (MPOs), which have the responsibility for addressing compliance with the Clean Air Act (see Chapter 10, "Air Quality"). The MPOs ensure that transportation projects conform to the states' plans to improve air quality, as delineated in their state implementation plans. Chapter 10, "Air Quality," Section 10.4 provides discussion of the Project's relationship to the NYMTC Transportation Improvement Program and the New York State Implementation Plan.

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1 The City of New York. April 2019. *OneNYC 2050: Building a Strong and Fair City*. http://onenyc.cityofnewyork.us/strategies/onenyc-2050/.

2 The City of New York. April 2019. *OneNYC 2050: Building a Strong and Fair City*. Volume 8, Efficient Mobility, p. 24.

In the New York metropolitan region, New York City and five surrounding New York counties (Nassau and Suffolk Counties in Long Island; and Putnam, Rockland, and Westchester Counties north of New York City) are within the jurisdiction of NYMTC. Northern New Jersey is within the jurisdiction of the North Jersey Transportation Planning Authority (NJTPA). Mercer County, New Jersey, is within the jurisdiction of the Delaware Valley Regional Planning Commission, the MPO for the greater Philadelphia region. Orange County, New York, has a dedicated MPO—the Orange County Transportation Council; likewise, Dutchess County, New York, is under the jurisdiction of the Dutchess County Transportation Council. In Connecticut, Fairfield and New Haven Counties are split among the jurisdictions of five MPOs: the South Western Region MPO, the Housatonic Valley MPO, the Greater Bridgeport and Valley MPO, the Central Naugatuck Valley MPO, and the South Central Regional MPO. Each MPO must produce a regional transportation plan (sometimes referred to as a long-range transportation plan) with a long-term plan for the region's transportation system, which must be updated regularly. Table 5C-1 provides information on each of the MPOs in the regional study area and their most recent regional transportation plans, and Figure 5C-1 shows the jurisdiction of each of the MPOs.

NJTPA and NYMTC issued their most recent regional transportation plans in 2021. Both plans recognize the vital importance of reducing roadway congestion to assist the metropolitan area's sustainability and economic growth. NYMTC's plan, *Moving Forward: Your Region, Connected*, references the Project and describes congestion pricing as a strategy for reducing congestion and air pollution that would also raise funds to pay for additional transportation system improvements.[3] NJTPA's plan, *Plan 2050: Transportation, People, Opportunity*, describes "severe congestion in some locations, hampering commerce and commuting, and causing growing safety and environmental concerns"[4] as a key transportation challenge facing the region. Both plans highlight the need for congestion reduction in the New York and northern New Jersey metropolitan region to support existing, as well as future, transportation needs.

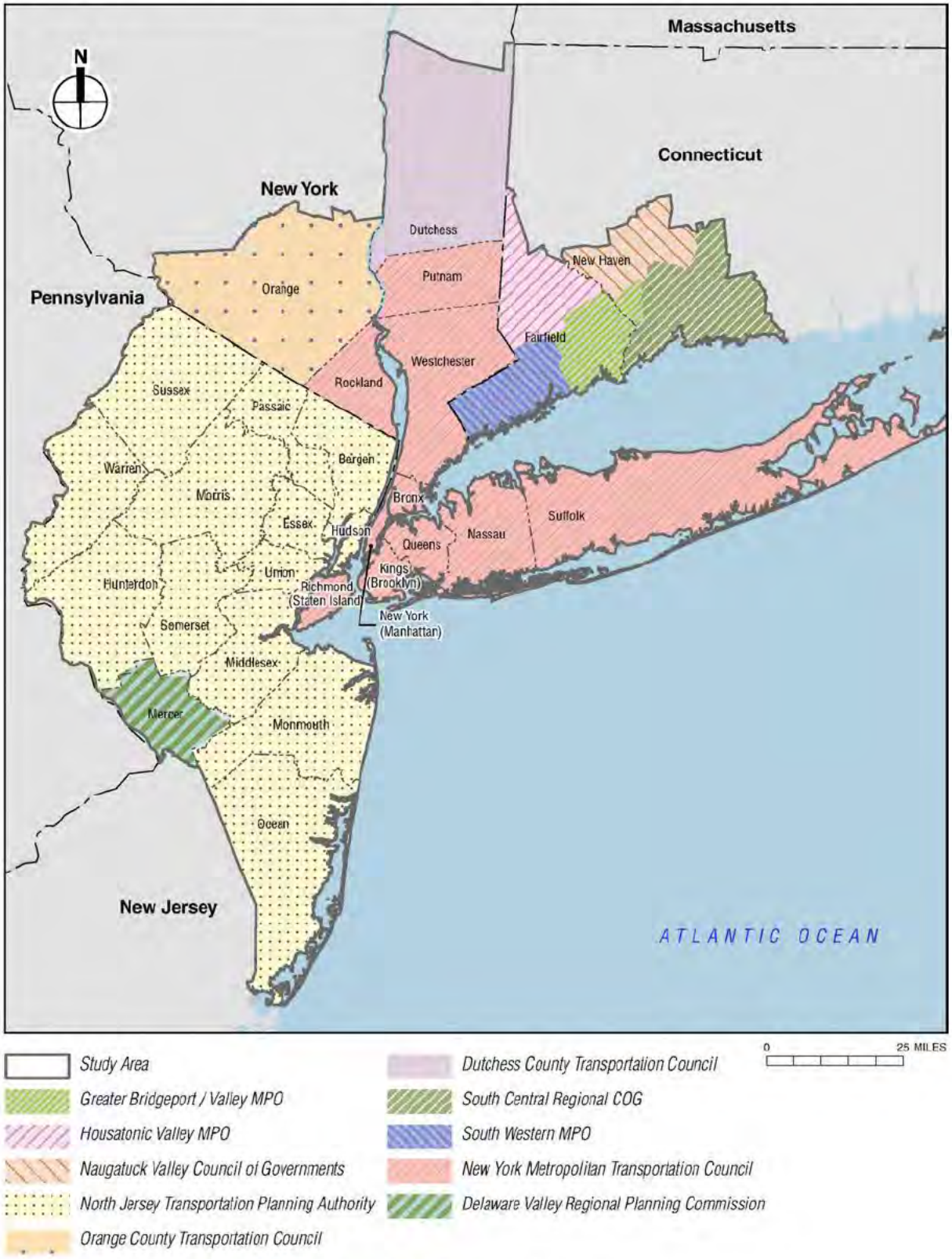
The other MPOs in the regional study area focus on counties outside the core of the New York City region. Their regional transportation plans share a focus on the importance of reducing congestion within each MPO's jurisdiction, and several of the plans specifically reference congestion pricing as a tool for achieving such reductions in their areas of focus.

[3] New York Metropolitan Transportation Council. September 2021. *Moving Forward: Your Region, Connected*. p. 211.
[4] North Jersey Transportation Planning Authority. September 2021. *Plan 2050: Transportation, People, Opportunity*. p. 1.

Table 5C-1. Metropolitan Planning Organizations in the Regional Study Area

METROPOLITAN PLANNING ORGANIZATION (MPO)	JURISDICTION	REGIONAL TRANSPORTATION PLAN	LINK
New York Metropolitan Transportation Council	New York City and Nassau, Putnam, Rockland, Suffolk, and Westchester Counties, New York	*Moving Forward: Your Region, Connected* (September 2021)	https://nymtcmovingforward.org/pdfs/nymtc_lrtp_2050_book.pdf
North Jersey Transportation Planning Authority	Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren Counties, New Jersey	*Plan 2050: Transportation, People, Opportunity* (September 2021)	https://www.njtpa.org/Planning/Plans-Guidance/Plan-2050.aspx
Delaware Valley Regional Planning Commission	Mercer County, New Jersey *(includes areas outside the regional study area)*	*Connections 2050: Plan for Greater Philadelphia* (September 2021)	https://www.dvrpc.org/plan
Orange County Transportation Council	Orange County, New York	*Orange County Long Range Transportation Plan 2045* (November 2019)	https://www.orangecountygov.com/485/Long-Range-Transportation-Plan
Dutchess County Transportation Council	Dutchess County, New York	*Moving Dutchess Forward* (July 2021)	https://www.dutchessny.gov/Departments/Transportation-Council/Transportation-Plan.htm
South Western Region MPO	Part of Fairfield County, Connecticut	*South Western Region Metropolitan Planning Organization 2019–2045 Long Range Transportation Plan* (April 2019)	https://westcog.org/transportation/foundational-plans/long-range-transportation-plans/#swrmpo
Housatonic Valley MPO	Part of Fairfield County, Connecticut *(includes areas outside the regional study area)*	*Housatonic Valley Metropolitan Planning Organization 2019–2045 Long Range Transportation Plan* (April 2019)	https://westcog.org/transportation/foundational-plans/long-range-transportation-plans/#hvmpo
Greater Bridgeport and Valley MPO	Parts of Fairfield and New Haven Counties, Connecticut	*Metropolitan Transportation Plan 2019–2045: Greater Bridgeport & Valley Metropolitan Planning Organization* (March 2019)	https://metrocog-website.s3.us-east-2.amazonaws.com/Website+Content/MTP/MTP+Final+2019-03-28.pdf
Central Naugatuck Valley MPO	Part of New Haven County, Connecticut *(includes areas outside the regional study area)*	*Metropolitan Transportation Plan for the Naugatuck Valley Planning Region: 2019–2045* (April 2019)	https://nvcog.maps.arcgis.com/apps/MapSeries/index.html?appid=95aa35d9cd7747e68d2205d86c15dbb0
South Central Regional MPO	Part of New Haven County, Connecticut	*South Central Regional Metropolitan Transportation Plan 2019–2045* (April 2019)	https://scrcog.org/transportation-planning/metropolitan-transportation-plan/

Figure 5C-1. Metropolitan Planning Organizations in the Regional Study Area



Source: ArcGIS Online, https://www.arcgis.com/index.html; each MPO.

5C.2.3 New York State Smart Growth Public Infrastructure Policy Act

The Smart Growth Public Infrastructure Policy Act requires that State of New York infrastructure agencies, including TBTA and NYSDOT, ensure that public infrastructure projects are consistent with 11 smart growth criteria to minimize environmental degradation, loss of open space, and disinvestment in existing communities. Smart growth criteria encourage projects that focus on existing infrastructure in municipal centers and other developed areas. The following 11 smart growth criteria reflect the State of New York's commitment to sustainable development that strengthens existing communities and develops new ones without compromising the needs of future generations, all while reducing greenhouse gas emissions and mitigating future climate risks:

- To advance projects for the use, maintenance, or improvement of existing infrastructure
- To advance projects located in municipal centers
- To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan
- To protect, preserve and enhance the state's resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archeological resources
- To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income and age groups
- To provide mobility through transportation choices including improved public transportation and reduced automobile dependency
- To coordinate between state and local government and intermunicipal and regional planning
- To participate in community-based planning and collaboration
- To ensure predictability in building and land use code
- To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation[5]

5C.2.4 Climate Leadership and Community Protection Act

The Climate Leadership and Community Protection Act, which became law in July 2019, establishes a comprehensive climate policy for New York State. The act requires that the State of New York reduce

[5] New York State Environmental Conservation Law, Article 6, State Smart Growth Public Infrastructure Policy Act. https://dos.ny.gov/system/files/documents/2020/08/smart-growth-public-infrastructure-act.pdf.

greenhouse gas emissions to 85 percent below 1990 levels by 2050 and offset the remaining 15 percent, establishing a "net-zero" economy. It also includes provisions that 70 percent of the state's electricity must come from renewable energy by 2030, and 100 percent of the state's electricity supply must be emissions free by 2040. The act seeks to ensure environmental justice by requiring that a minimum of 35 percent of investments from clean energy and energy efficiency funds be invested in *[disadvantaged]* communities. The act also creates a Climate Action Council, which *[was tasked with creating]* a plan for reducing emissions across all sectors of the economy, including the transportation sector. *[The Council's Scoping Plan was released in December 2022. The Scoping Plan identifies the CBD Tolling Program as a strategy that will help the State of New York meet its emissions reduction goals, as a market-based policy that "can provide the dual benefits of discouraging more costly carbon-intensive behavior and providing a revenue source for investment in other strategies."[6]]*

5C.3 CONSISTENCY WITH APPLICABLE PUBLIC POLICIES

5C.3.1 No Action Alternative

The No Action Alternative would not implement a vehicular tolling program that would reduce traffic congestion in the Manhattan CBD in a manner that would generate revenue for future transportation improvements. Under the No Action Alternative, roadway traffic and transit ridership would experience normal background growth. NYMTC Best Practice Model (BPM) results indicate that congestion within the Manhattan CBD would continue to increase, with daily VMT in the Manhattan CBD growing between the 2023 and 2045 analysis years (see **Table 4A-2** in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"**).[7] The No Action Alternative is not consistent with public policy, because it would not advance the goals of *OneNYC 2050*, regional transportation plans, the Smart Growth Public Infrastructure Policy Act, or the Climate Leadership and Community Protection Act.

5C.3.2 CBD Tolling Alternative

This section describes the potential effects of the CBD Tolling Alternative (all tolling scenarios) on the public policies described earlier in **Section 5C.2**. **Chapter 13, "Natural Resources,"** describes the CBD Tolling Alternative's consistency with coastal zone policies.

ONENYC 2050: NEW YORK CITY'S STRATEGIC PLAN

The CBD Tolling Alternative would be consistent with and supportive of the objectives of *OneNYC 2050*. *OneNYC 2050* explicitly recommends CBD tolling in its Initiative 26, "Reduce congestion and emissions." Regionwide, reductions in vehicle volumes and the corresponding shift of some journeys from auto to transit, walking, and cycling (see **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"**) would contribute to reduced pollutant emissions (see **Chapter 10, "Air Quality"**), and toll

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6 *[New York State Climate Action Council, "Scoping Plan," December 2022. https://climate.ny.gov/resources/scoping-plan/.]*

7 As noted in **Chapter 1, "Introduction,"** MTA data for September 2021 shows that weekday vehicle traffic activity at TBTA crossings was approximately only 5 percent below pre-COVID-19 pandemic levels on average. September weekday data was adjusted to exclude Labor Day and Yom Kippur. Source: Metropolitan Transportation Authority Day-by-Day Ridership Numbers. https://new.mta.info/coronavirus/ridership.

revenue would facilitate a new funding source for MTA. Accordingly, the CBD Tolling Alternative would also help advance various other initiatives of *OneNYC 2050*, including the following:

- Initiative 16, "Design a physical environment that creates the conditions for health and well-being," which focuses in part on reducing air pollutant emissions.
- Initiative 20, "Achieve carbon neutrality and 100 percent clean energy," which emphasizes the importance of inducing mode shift from driving to transit, cycling, and walking.
- Initiative 24, "Modernize New York City's mass transit networks," which encourages facilitating a new funding source to support MTA projects.
- Initiative 25, "Ensure New York City's streets are safe and accessible," which envisions reprioritizing space on city streets where vehicular congestion has been reduced because of the Project.

The City of New York, through the New York City Department of Transportation, is a partner in the planning and development of the CBD Tolling Alternative.

REGIONAL TRANSPORTATION PLANS

The CBD Tolling Alternative would be consistent with and supportive of the objectives of the regional transportation plans from MPOs across the 28-county New York City region. Specifically, the CBD Tolling Alternative would implement a congestion pricing strategy to reduce congestion in the Manhattan CBD, consistent with the strategies detailed in NYMTC's *Moving Forward: Your Region, Connected*. It would also provide a new funding source for MTA's 2020–2024 Capital Program, which includes projects that are noted in *Moving Forward*.

BPM results show that VMT would increase in New Jersey under all tolling scenarios. However, these increases would be negligible (between 0.01 percent and 0.20 percent (see Table 4A-7 in Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling"), and would be widely distributed across northern New Jersey. A nominal increase in VMT in New Jersey does not directly translate to an increase in congestion, and the projected change in VMT under the CBD Tolling Alternative would not preclude NJTPA from implementing its own programs and initiatives to reduce congestion in northern New Jersey. Therefore, the change in VMT associated with the CBD Tolling Alternative is not inconsistent with the NJTPA Regional Transportation Plan. NJTPA is a participating agency for the Project. NJTPA attended an agency coordination meeting with the Project Sponsors on September 10, 2021, and NJTPA will have an opportunity to review and comment on this EA. The Project Sponsors will also continue to coordinate with NJTPA as part of the Project's agency coordination activities.

SMART GROWTH PUBLIC INFRASTRUCTURE POLICY ACT

The CBD Tolling Alternative would be consistent with the 11 policies of the Smart Growth Public Infrastructure Policy Act. As shown in Appendix 5C, "Social Conditions: New York State Smart Growth Public Infrastructure Policy Act Consistency Assessment," the Smart Growth checklist indicates that the CBD Tolling Alternative would advance projects to use, maintain, or support existing infrastructure, support activity in municipal centers, and promote mobility and sustainability.

CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT

The CBD Tolling Alternative would be consistent with and supportive of the objectives of the Climate Leadership and Community Protection Act. By reducing VMT ***[within a 28-county region in New York, New Jersey, and Connecticut]***, the CBD Tolling Alternative would reduce emissions of key greenhouse gases ***[(e.g., carbon dioxide and nitrous oxide)]*** that are known to contribute to climate change. ***[In the 12-county area including New York City, Long Island, and Putnam, Rockland, Westchester, Hudson and Bergen Counties, the CBD Tolling Alternative would reduce greenhouse gas emissions, in carbon dioxide equivalents, by 0.6 percent in 2023 and by 0.8 percent in 2045 under Tolling Scenario A (the scenario predicted to result in the lowest reduction in VMT).]*** This would in turn contribute to reducing New York State's overall carbon emissions, consistent with the goals of the climate policy established by this act. ***[Indeed, the CBD Tolling Alternative is identified as an emissions-reduction strategy in the Climate Action Council's Scoping Plan.]***

5C.4 CONCLUSION

By catalyzing regionwide reductions in vehicle volumes and VMT; precipitating mode shifts from auto to transit, walking, and cycling; reducing emissions of air pollutants and greenhouse gases; and providing a new funding source for MTA, the CBD Tolling Alternative would be consistent with and supportive of *OneNYC 2050*, regional transportation plans, and the Climate Leadership and Community Protection Act. By advancing a project to use, maintain, or support existing infrastructure, support activity in municipal centers, and promote mobility and sustainability, the CBD Tolling Alternative would be consistent with the Smart Growth Public Infrastructure Policy Act. **Table 5C-2** summarizes the effects of the Project.

Table 5C-2. Summary of Effects of the CBD Tolling Alternative Related to Public Policy

SUMMARY OF EFFECTS	EFFECT FOR ALL TOLLING SCENARIOS	POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
No effect	In all tolling scenarios, the Project would be consistent with regional transportation plans and other public policies in place for the regional study area and the Manhattan CBD.	No	**No mitigation needed.** No adverse effects

6. Economic Conditions

6.1 INTRODUCTION

This chapter assesses the potential effects of implementing the CBD Tolling Alternative on economic conditions within the affected environment at both the regional and neighborhood levels.

6.2 METHODOLOGY

6.2.1 Framework for Economic Conditions Analysis

An assessment of economic conditions includes consideration of a project's effects on productivity, employment, and business activity. It also considers potential economic changes that could lead to the loss of critical goods and services and/or neighborhood investment.

Economic conditions may be affected by projects in three ways:

- **Direct displacement**, which occurs when residents or businesses must move from a site or sites as a direct result of a project. Examples include the redevelopment of an already occupied site for new uses or structures, or an easement or right-of-way that would take a portion of that occupied site or property, rendering it unfit for its current use.
- **Indirect displacement** (also known as secondary displacement), which occurs when a project alters one or more of the underlying forces that shape real estate market conditions in an area, resulting in conditions that cause the displacement of residents, businesses, or employees. Examples include lower-income residents forced out due to rising rents caused by a new concentration of higher income housing introduced by a project; a similar turnover of industrial to higher-paying commercial tenants spurred by the introduction of a successful office project in the area, or the introduction of a new use, such as residential; or increased retail vacancy resulting from business closure when a large new retailer saturates the market for particular categories of goods. Specific to the CBD Tolling Alternative, as noted in **Chapter 18, "Agency Coordination and Public Outreach,"** during early public outreach conducted in the fall of 2021, members of the public raised concerns that the additional cost of a toll could "price out" residents, visitors, and businesses from the Manhattan CBD, forcing residents to leave and businesses to close.
- **Change in the economic and operational conditions of an industry**, within or outside a directly affected area, that results in a loss or substantial diminishment of a particularly important product or service. For example, changes in operational conditions of the taxi and FHV industries could create adverse socioeconomic effects if a substantial number of residents or workers who depend on taxis or FHVs would no longer be served, thereby affecting their access to transportation. As noted in **Chapter 18,**

"Agency Coordination and Public Outreach," during early public outreach conducted in the fall of 2021, taxi/FHV vehicle drivers raised concerns about economic hardship specific to the industry.

This Project would not result in any direct displacements, because the tolling infrastructure and tolling system equipment would not require the taking of any privately owned property. Thus, the analysis in this chapter focuses on potential indirect displacement effects and potential changes in the operations of certain industries, with analysis conducted at a regional level (Section 6.3) and at a localized, neighborhood level (Section 6.4). The assessments of potential economic benefits and adverse effects utilize guidance from the National Cooperative Highway Research Program's *Guidebook for Assessing the Social and Economic Effects of Transportation Projects*[1] and Chapter 5, "Socioeconomic Conditions," of the City of New York's 2021 *City Environmental Quality Review (CEQR) Technical Manual*.[2]

6.2.2 Study Areas

The study areas for this economic assessment are the geographic areas where the Project could alter economic conditions (either positively or negatively) to an extent that potential indirect displacement or adverse effects on specific industries could occur. The analysis assesses separate study areas for consideration of potential regional and local effects on economic conditions as set forth in Section 6.3 and Section 6.4, respectively.

6.2.3 Data and Information Sources

The following data sources were used in this analysis:

- Best Practice Model (BPM) results (see Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling")
- U.S. Census Bureau, 2015–2019 American Community Survey (ACS)[3]
- 2012–2016 ACS from the Census Transportation Planning Package (CTPP) data product[4]
- 2006–2010 and 2012–2016 ACS Journey to Work[5]
- U.S. Census Bureau Longitudinal Employer-Household Dynamics data, available through OnTheMap[6]
- U.S. Department of Labor, Bureau of Labor Statistics[7]
- Esri Business Analyst (private data provider, for retail sales estimates by geography)[8]

1 https://www.ebp-us.com/en/projects/guidebook-assessing-social-economic-effects-transportation-projects.
2 https://www1.nyc.gov/assets/oec/technical-manual/05_Socioeconomic_Conditions_2021.pdf.
3 https://www.census.gov/programs-surveys/acs/data.html.
4 https://ctpp.transportation.org/2012-2016-5-year-ctpp/. The CTPP data product is based on the 2012–2016 ACS 5-Year Estimates and is produced by the American Association of State Highway and Transportation Officials (AASHTO). The CTPP provides custom tables describing residence, workplace, and trip from home to work. AASHTO has not updated the CTPP to reflect more recent ACS data.
5 https://www.census.gov/topics/employment/commuting.html.
6 https://onthemap.ces.census.gov/.
7 https://www.bls.gov/.
8 https://www.esri.com/en-us/arcgis/products/arcgis-business-analyst/overview.

- New York City Department of City Planning Neighborhood Tabulation Areas data, based on U.S. Census Bureau, 2013–2017 ACS[9]
- New York City Department of Consumer Affairs data related to off-street parking facilities, obtained from the New York City Department of Information Technology & Telecommunications NYCityMap program[10]
- U.S. Census Bureau, ZIP Code Business Patterns by Employment Size Class, 2018
- Various industry literature (specific sources cited by footnote throughout)

These data sources were developed prior to the onset of the COVID-19 pandemic, and therefore do not reflect workforce and employment changes resulting from the pandemic, including the substantial increase in work-from-home rates. At this time, it would be speculative to estimate long-term (post-pandemic) employment levels and work-from-home rates for the region. In addition, the use of more recent data would not be appropriate given the unusual circumstances that the pandemic created.

6.3 REGIONAL ASSESSMENT

6.3.1 Regional Study Area

Both regional and local market forces influence the potential for indirect residential or business displacement; therefore, both study areas are considered as part of the neighborhood-level assessment. At the regional level, the economic conditions assessment considers whether the Project could alter the economic and operational conditions of certain types of businesses or processes by changing the movement of workers, goods and services, and consumers into, out of, and through the Manhattan CBD. The 28-county region is the study area for this analysis. This regional study area is defined in **Chapter 3, "Environmental Analysis Framework,"** and illustrated in **Figure 3-1** of that chapter.

6.3.2 Affected Environment

This section describes current conditions with respect to the movement of workers, goods and services, and consumers in the regional study area. The region includes portions of three states—New York, New Jersey, and Connecticut—and is home to approximately 22.2 million residents. It is the largest metropolitan economy in the United States, accounting for nearly 10 percent of the U.S. economy.[11] New York City serves as the social and economic core of the region, and its 8.4 million residents represent about 37 percent of the regional study area's population.

9 https://www1.nyc.gov/site/planning/data-maps/open-data/dwn-nynta.page.
10 http://maps.nyc.gov/doitt/nycitymap/.
11 New York City Department of City Planning. July 2018. "The Geography of Jobs NYC Metro Region Economic Snapshot." https://www1.nyc.gov/assets/planning/download/pdf/planning-level/housing-economy/nyc-geography-jobs-0718.pdf.

6.3.2.1 *Employed Labor Force and Jobs*

Approximately 11.0 million working labor force participants—those who identify as working members of the labor force regardless of where they work—live within the region (**Table 6-1**). Of that regional working labor force, approximately 4.1 million workers (about 37 percent) reside in New York City. Within New York City, the largest number of workers reside in Kings County (Brooklyn), followed closely by Queens County, and then New York County (Manhattan). The estimated 372,091 workers who live within the Manhattan CBD represent only about 3 percent of the region's employed labor force; Manhattan resident-workers living outside the Manhattan CBD account for approximately 5 percent of the region's employed labor force.

Table 6-1. Employed Labor Force and Jobs in the Regional Study Area

GEOGRAPHIC AREAS	EMPLOYED LABOR FORCE	EMPLOYED LABOR FORCE AS PERCENTAGE OF REGION	JOBS	JOBS AS PERCENTAGE OF REGION
New York City	**4,083,215**	**37.2%**	**4,579,070**	**43.1%**
Bronx County	601,341	5.5%	376,455	3.5%
Kings County (Brooklyn)	1,227,030	11.2%	855,115	8.0%
New York County (Manhattan)	905,475	8.3%	2,495,355	23.5%
Inside Manhattan CBD	372,091	3.4%	1,554,368	14.6%
Outside Manhattan CBD	533,384	4.9%	940,987	8.8%
Queens County	1,134,877	10.3%	721,775	6.8%
Richmond County (Staten Island)	214,492	2.0%	130,370	1.2%
Long Island Counties[1]	**1,439,914**	**13.1%**	**1,210,050**	**11.4%**
New York Counties North of New York City[2]	**1,003,701**	**9.1%**	**817,665**	**8.1%**
New Jersey Counties[3]	**3,539,762**	**32.3%**	**3,162,905**	**29.8%**
Connecticut Counties[4]	**907,235**	**8.3%**	**859,675**	**8.1%**
TOTAL	**10,973,827**	**100.0%**	**10,629,365**	**100.0%**

Source: ACS 2012–2016 5-Year Estimates, special tabulation—Census Transportation Planning Products.
Note: Region totals are the sums of the first five rows; percentages may not sum to 100 percent due to rounding. Numbers from different tables in the CTPP (e.g., total commuters to the Manhattan CBD) may not be identical due to rounding and different methods of estimating inherent in the CTPP.

1 Long Island counties include Nassau and Suffolk.
2 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.
3 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.
4 Connecticut counties include Fairfield and New Haven.

Approximately 6.9 million workers (about 63 percent of the region's employed labor force) reside outside of New York City in surrounding regional counties in Long Island, New York counties north of New York City, New Jersey, and Connecticut. Approximately 1.4 million workers (about 13 percent of the region's employed labor force) reside in Long Island counties, while just over 1.0 million workers (about 9 percent) reside in the region's New York counties north of New York City. Approximately 3.5 million workers (about 32 percent) reside in the region's New Jersey counties, while roughly 900,000 workers (about 8 percent) reside in the region's Connecticut counties. Over 90 percent of the region's workforce living outside New York City

commute to jobs located outside the Manhattan CBD, while approximately 75 percent of New York City residents commute to jobs outside the Manhattan CBD.

The region's employed labor force participants do not necessarily work near their places of residence and may not even work in the region (though most do).[12] Table 6-1 also presents the numbers of jobs located within the various geographic areas that comprise the regional study area. In total, approximately 10.7 million jobs are within the region. Of those jobs, nearly 4.6 million (about 43 percent) are within New York City. More than half of the jobs within New York City are in Manhattan, and about one-third of all New York City jobs are within the Manhattan CBD. Not surprisingly, there is a very high concentration of total regional employment within the Manhattan CBD (nearly 15 percent of all regional jobs) relative to the percentage of the region's labor force who reside in the Manhattan CBD (approximately 3 percent). New Jersey counties and Long Island counties also have substantial concentrations of jobs, with 3.2 million (30 percent) and 1.2 million (11 percent) jobs, respectively. The New York counties north of New York City and the Connecticut counties have relatively fewer jobs, with both areas hosting fewer than 1 million (approximately 8 percent) of the region's jobs.

Figure 6-1 presents a spatial representation of the region's employment densities (jobs per square mile). As shown in the figure, the region's jobs are most heavily concentrated within the Manhattan CBD. Figure 6-2 illustrates the distribution of the regional labor force's employment types by industry category (i.e., jobs held by the region's residents), as classified by the North American Industry Classification System (NAICS).[13] (Appendix 6A, "Economic Conditions: Information on Industry Sectors of Regional Labor Force and Employment," provides detailed tabular data for this figure.) Relative to the regional study area as a whole, New York City's employed labor force holds notable proportions of the regional jobs in the following NAICS industry categories of Arts, Entertainment, and Recreation (with 45 percent of the regional employment held by New York City residents); Information (45 percent); Transportation and Warehousing, and Utilities (41 percent); and Other Services (41 percent). The two categories for which New York City residents comprise the lowest proportion of the region's employment are the Agriculture, Forestry, and Fishing industry category (approximately 18 percent) and the Manufacturing industry category (approximately 20 percent).

Long Island has a higher percentage of its working labor force employed within the Agriculture, Forestry, Fishing and Hunting, and Mining industry category (17 percent) relative to these counties' total percentage of regional labor force (13 percent).The working labor force from the New York counties north of New York City also contribute a disproportionately large percentage of employees to the Agriculture, Forestry, Fishing and Hunting, and Mining industry category (19 percent of the region's employees) relative to their overall contribution to the regional working labor force (9 percent). Otherwise, this geography's employment by industry category is generally distributed within a percentage point of its 9 percent contribution to overall employment in the region.

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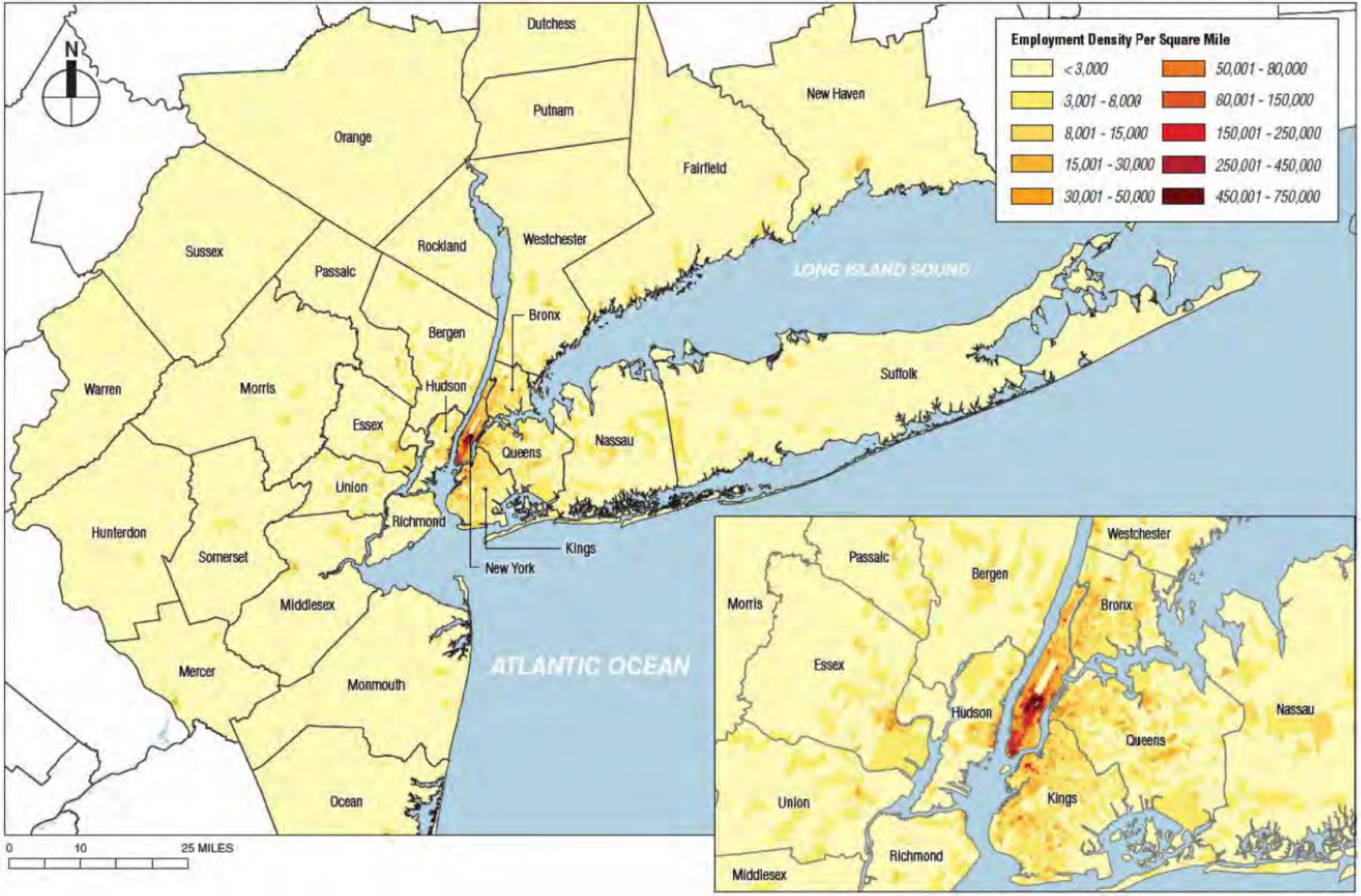
[12] Based on U.S. Census Bureau Longitudinal Employer-Household Dynamics data available through OnTheMap, approximately 93 percent of jobs in the region are held by regional labor force participants; the remaining approximately 7 percent of jobs are held by labor force members from outside the regional study area. Conversely, approximately 95 percent of the employed region's labor force work inside of the region; the remaining 5 percent work outside the region.

[13] The standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy; https://www.census.gov/eos/www/naics/.

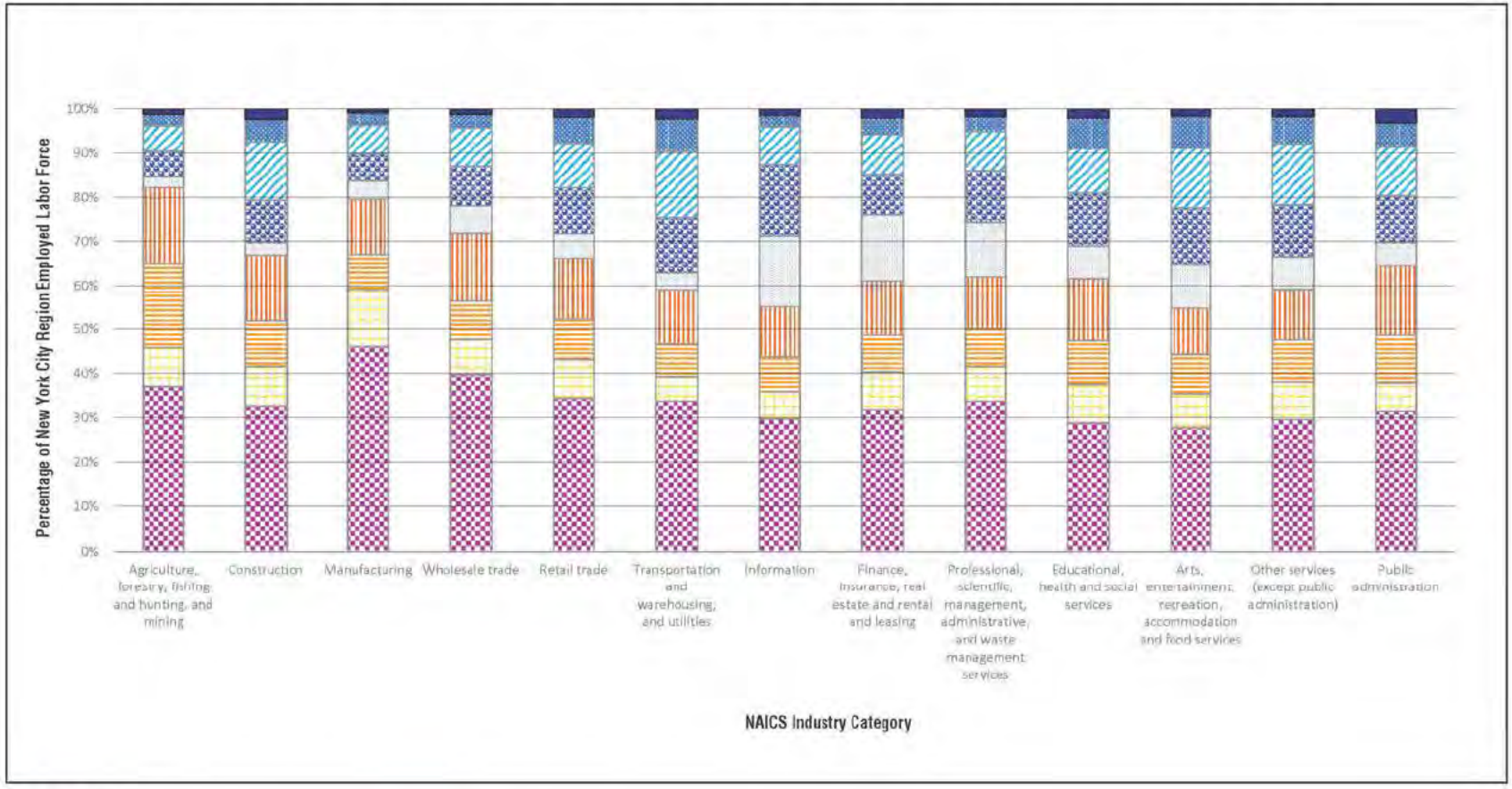
Figure 6-1. Employment Density in the Regional Study Area



Source: U.S. Census Bureau, CTPP, 2012–2016.

[Note: For an audio description, please go to the following link: https://www.youtube.com/watch?v=xn811kjoBWQ&list=PLZHkn788ZQJPEY5zv-dr2gzkzMQFMgb_2&index=6.]

Figure 6-2. Regional Study Area Employed Labor Force by North American Industry Classification System Industry Category



Source: U.S. Census Bureau, ACS, 2015–2019 5-Year Estimates.

The New Jersey labor force has notable concentrations of employment in the Manufacturing and Wholesale Trade industry categories, constituting approximately 46 percent and 40 percent, respectively, of the region's employed labor force for these categories.

Jobs by Industry and Occupation

Figure 6-3 shows the types of jobs located within the region by NAICS industry category; **Appendix 6A, "Economic Conditions: Information on Industry Sectors of Regional Labor Force and Employment,"** provides detailed tabular data for this figure. Manhattan has the largest share of the regional study area's jobs in the Information category (44 percent of regional jobs); Finance, Insurance, Real Estate, and Rental and Leasing (41 percent); and Professional, Scientific, Management, Administrative, and Waste Management Services industry categories (33 percent). In contrast, only approximately 13 percent to 16 percent of the Manhattan labor force is employed in each of these three industry categories, indicating that Manhattan attracts workers from throughout the region to these jobs. The largest shares of jobs in the Manufacturing and Wholesale Trade categories are in New Jersey, with 46 percent and 39 percent, respectively, of the region's jobs in those categories.

Manhattan CBD Workers

On an average weekday, over 1.5 million people work within the Manhattan CBD (referred to in this chapter as Manhattan CBD workers).[14] **Table 6-2** shows the distribution of these workers' jobs by NAICS industry category.[15] The industry category employing the largest number of workers in the Manhattan CBD is Professional, Scientific, and Management, and Administrative and Waste Management Services; this industry category employs nearly one-quarter of all workers in the Manhattan CBD. Other prominent industry categories are Finance and Insurance, and Real Estate and Rental and Leasing (about 20 percent of Manhattan CBD workers), and Educational Services, and Health Care and Social Assistance (together, 12 percent of Manhattan CBD workers).

In addition to industry type, employment in the Manhattan CBD can also be assessed by occupation, using categories developed by the Bureau of Labor Statistics in its Standard Occupational Classification (SOC) System.[16] **Table 6-3** presents the same Manhattan CBD workers as **Table 6-2**, but with their job types distributed by SOC category. Of the 24 occupational categories, four categories employ over half of all Manhattan CBD workers: Management (nearly 18 percent); Office and Administrative Support (12 percent); Business and Financial (12 percent); and Sales and Retail (11 percent).

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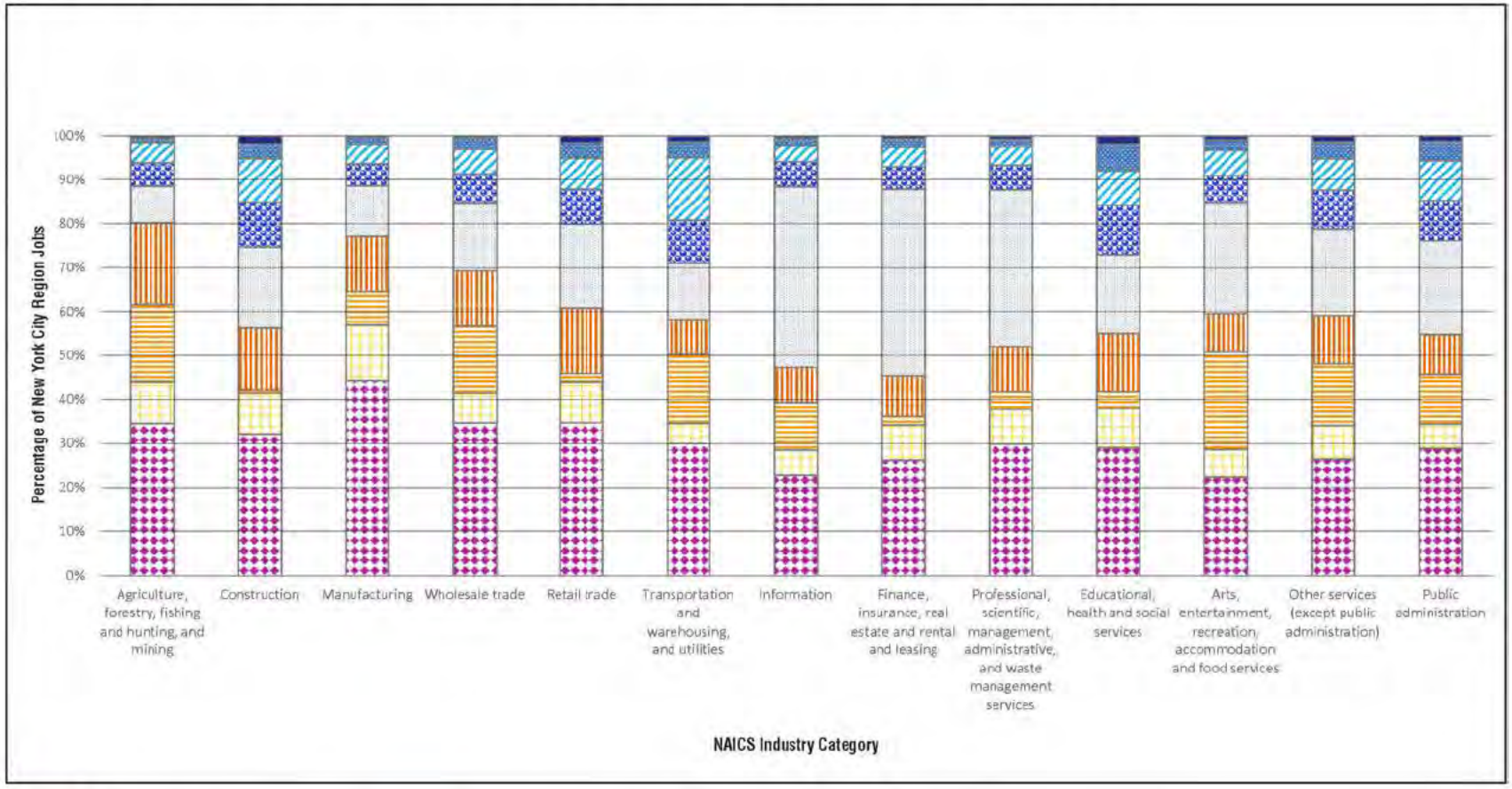
14 U.S. Census Bureau, CTPP, 2012–2016, Part 2.

15 The U.S. Census Bureau aggregates certain two-digit industry sectors into industry groupings, or categories, in order to provide statistically reliable estimates for census tract-level geographies. Specifically: Sector 11 – Agriculture, forestry, fishing and hunting is grouped with Sector 21 – Mining, Quarrying, and Oil and Gas Extraction; Sector 52 – Finance and insurance is grouped with Sector 53 – Real estate and rental and leasing; Sector 54 – Professional, scientific, and technical services is grouped with Sector 55 – Management of companies and enterprises as well as Sector 56 – Administrative support and waste management and remediation services; Sector 61 – Educational services is grouped with Sector 62 – Health care and social assistance; and Sector 71 – Arts, entertainment and recreation is grouped with Sector 72 – Accommodation and food services.

16 The SOC system is a Federal statistical standard used by Federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. https://www.bls.gov/soc/.

Figure 6-3. Regional Study Area Jobs by North American Industry Classification System Industry Category



Source: U.S. Census Bureau, ACS, 2015–2019 5-Year Estimates.

Table 6-2. North American Industry Classification System Industry Categories of Manhattan CBD Workers

NAICS CODES	INDUSTRY CATEGORIES	ALL MANHATTAN CBD WORKERS	PERCENTAGE OF ALL MANHATTAN CBD WORKERS
11, 21	Agriculture, forestry, fishing and hunting, and mining	1,087	0.1%
23	Construction	42,467	2.7%
31–33	Manufacturing	55,013	3.5%
42	Wholesale trade	39,271	2.5%
44–45	Retail trade	117,904	7.6%
48–49, 22	Transportation and warehousing, and utilities	41,420	2.7%
51	Information	120,408	7.8%
52–53	Finance and insurance, and real estate and rental and leasing	306,288	19.7%
54–56	Professional, scientific, and management, and administrative and waste management services	365,795	23.5%
61–62	Educational services, and health care and social assistance	192,030	12.4%
71–72	Arts, entertainment, and recreation, and accommodation and food services	150,708	9.7%
81	Other services (except public administration)	53,608	3.5%
92	Public administration	67,836	4.4%
928110	Armed forces	533	<0.1%

Source: U.S. Census Bureau, CTPP, 2012–2016, Part 2.

Table 6-3. Standard Occupational Classification Categories of Manhattan CBD Workers

SOC GROUPS	OCCUPATIONAL CATEGORIES	MANHATTAN CBD WORKERS	PERCENTAGE OF ALL MANHATTAN CBD WORKERS
11-0000	Management occupations	273,591	17.6%
13-0000	Business and financial operations specialists	188,380	12.1%
15-0000	Computer and mathematical occupations	87,008	5.6%
17-0000	Architecture and engineering occupations	24,906	1.6%
19-0000	Life, physical, and social science occupations	12,939	0.8%
21-0000	Community and social service occupations	18,904	1.2%
23-0000	Legal occupations	70,961	4.6%
25-0000	Education, training, and library occupations	47,128	3.0%
27-0000	Arts, design, entertainment, sports, and media occupations	116,405	7.5%
29-0000	Healthcare practitioners and technicians occupations	39,678	2.6%
31-0000	Healthcare support occupations	21,419	1.4%
33-0000	Protective service occupations	38,222	2.5%
35-0000	Food preparation and serving related occupations	65,648	4.2%
37-0000	Building and grounds cleaning and maintenance occupations	43,580	2.8%
39-0000	Personal care and service occupations	33,540	2.2%
41-0000	Sales and related occupations	171,705	11.0%
43-0000	Office and administrative support occupations	190,963	12.3%
45-0000	Farming, fishing, and forestry occupations	494	<0.1%
47-0000	Construction and extraction occupations	32,933	2.1%
49-0000	Installation, maintenance, and repair occupations	15,390	1.0%
51-0000	Production occupations	27,508	1.8%
53-0000	Transportation and material moving occupations	32,794	2.1%
55-0000	Armed forces	244	<0.1%

Source: U.S. Census Bureau, CTPP, 2012–2016, Part 2.

Overall, the industry and occupation data show that relative to the region, the Manhattan CBD has high concentrations of office-based jobs such as business management, finance, and real estate, as well as service-based sectors like education and health care, retail, and arts and entertainment.

Small Businesses within the Manhattan CBD

In New York State, a small business is defined as one that has fewer than 100 employees and is independently owned and operated, as defined in Section 131 of the New York State's Economic Development Law. Small businesses with fewer than 20 employees, sometimes referred to as "Micro-businesses,"[17] would likely be more sensitive to goods delivery cost increases caused by the toll increases proposed under the CBD Tolling Alternative.

As shown in **Table 6-4**, there are approximately 77,121 businesses in the Manhattan CBD. Most of these businesses (approximately 91.0 percent) are small businesses, and a large majority of them (78.0 percent) are also considered micro-businesses. The distribution of small businesses (and micro-businesses) among industry types within the Manhattan CBD is similar to that of businesses of all sizes. The majority of businesses in the Manhattan CBD (approximately 68.9 percent) fall within one of five industry groupings including: Professional, Scientific, and Technical Services/Management/Administrative and Waste Management Services, which is the largest category (25.0 percent); followed by Finance and Insurance, and Real Estate and Rental and Leasing (15.7 percent); Accommodation and Food Services (10.1 percent); Retail Trade (9.5 percent); and Wholesale Trade (8.5 percent).

[17] Empire State Development (ESD) Annual Report on the State of Small Businesses, 2021.

Table 6-4. Small Businesses in the Manhattan CBD by Industry Category

NAICS CODES	INDUSTRY CATEGORIES	BUSINESSES IN THE MANHATTAN CBD (ALL SIZES)	PERCENTAGE OF ALL BUSINESSES IN THE MANHATTAN CBD	SMALL BUSINESSES (<100 EMPLOYEES)		MICRO-BUSINESSES (<20 EMPLOYEES)	
				TOTAL	PERCENTAGE OF BUSINESSES IN INDUSTRY CATEGORY	TOTAL	PERCENTAGE OF BUSINESSES IN INDUSTRY CATEGORY
23	Construction	1,541	2.0%	1,427	92.6%	1,202	78.0%
31–33	Manufacturing	1,499	1.9%	1,448	96.6%	1,307	87.2%
42	Wholesale trade	6,579	8.5%	6,407	97.4%	5,832	88.6%
44–45	Retail trade	7,309	9.5%	7,104	97.2%	6,331	86.6%
48–49, 21, 22	Transportation and warehousing; Utilities; Mining, quarrying and oil and gas extraction	557	0.7%	462	82.9%	393	70.6%
51	Information	3,648	4.7%	3,304	90.6%	2,762	75.7%
52–53	Finance and insurance, and real estate and rental and leasing	12,129	15.7%	11,520	95.0%	10,283	84.8%
54–56	Professional, scientific, and management, and administrative and waste management services	19,266	25.0%	14,930	77.5%	13,242	68.7%
61–62	Educational services, and health care and social assistance	5,948	7.7%	5,616	94.4%	4,908	82.5%
71–72	Arts, entertainment, and recreation,	3,621	4.7%	3,491	96.4%	3,134	86.6%
72	Accommodation and food services	7,818	10.1%	7,452	95.3%	5,007	64.0%
81	Other services (except public administration)	7,080	9.2%	6,922	97.8%	6,302	89.0%
99	Industries not classified	126	0.2%	122	96.8%	122	96.8%
	Total[1]	**77,121***		**70,205**	**91.0%**	**60,825**	**78.9%**

Source: U.S. Census, ZIP Code Business Patterns by Employment Size Class for 5-digit ZIP Code level (2018).
Note: Data on sectors with fewer than three establishments are withheld to avoid disclosing the operations of an individual employer, but those firms are included in the total count.

6.3.2.2 *Means of Transportation to Work*

The regional study area is well-served by public transit, with rail, buses, subways, and ferries providing commuters with public transportation options to the region's employment centers.[18] **Table 6-5** presents the means of commuting to work within the region by geographic area of origin (i.e., from where workers live). In total, approximately 29 percent of workers in the region commute by public transportation,[19] with the highest rates of public transportation utilization by workers commuting from Brooklyn (61 percent), the Bronx (60 percent), Manhattan (59 percent), and Queens (51 percent). Within Manhattan, the rate at which workforce members commute by public transit is higher for residents living outside the Manhattan CBD as compared to those living within the Manhattan CBD (65 percent and 50 percent, respectively); however, the workforce living inside the Manhattan CBD has a much higher rate of walking to work—30 percent—as compared to 13 percent for Manhattan residents living outside the Manhattan CBD.

Table 6-5. Means of Transportation to Work for Regional Study Area's Workforce

GEOGRAPHIC AREA OF ORIGIN	CAR, TRUCK, OR VAN (Drove Alone)	CAR, TRUCK, OR VAN (Carpooled)	PUBLIC TRANSPORTATION (Excluding Taxi)	WALKED	TAXICAB, MOTORCYCLE, BICYCLE, OR OTHER MEANS[1]	WORKED AT HOME
New York City	**22.3%**	**4.5%**	**56.0%**	**10.0%**	**3.0%**	**4.3%**
Bronx County	23.5%	4.4%	59.8%	7.4%	2.0%	3.0%
Kings County (Brooklyn)	18.4%	4.1%	61.2%	8.7%	3.0%	4.6%
New York County (Manhattan)	6.0%	1.9%	58.8%	20.4%	5.7%	7.2%
Inside Manhattan CBD	4.6%	1.4%	49.7%	30.2%	7.0%	7.1%
Outside Manhattan CBD	7.0%	2.2%	65.3%	13.4%	4.9%	7.3%
Queens County	32.4%	6.3%	51.2%	5.8%	1.6%	2.7%
Richmond County (Staten Island)	56.3%	7.7%	29.7%	2.6%	1.1%	2.7%
Long Island Counties[2]	**74.2%**	**7.4%**	**11.5%**	**1.8%**	**1.1%**	**4.0%**
New York Counties North of New York City[3]	**66.2%**	**8.3%**	**14.3%**	**4.1%**	**1.6%**	**5.5%**
New Jersey Counties[4]	**68.9%**	**7.9%**	**13.5%**	**3.1%**	**1.9%**	**4.7%**
Connecticut Counties[5]	**75.1%**	**8.3%**	**7.1%**	**2.9%**	**1.3%**	**5.4%**
TOTAL	**52.6%**	**6.6%**	**28.5%**	**5.5%**	**2.1%**	**4.6%**

Source: U.S. Census Bureau, ACS 2015–2019 5-Year Estimates.
Note: Percentages may not sum to 100 percent due to rounding.
1. The source ACS survey does not include an FHV category, only "car, truck, or van" and "taxicab." Those commuting by FHV may select taxi or car, truck, or van, depending on how they interpret the survey question.
2 Long Island counties include Nassau and Suffolk.
3 Counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.
4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.
5 Connecticut counties include Fairfield and New Haven.

18 Unless otherwise noted, the terms "public transportation" and "transit" are used interchangeably throughout this chapter.
19 In 2019 the regional study area's rate of commutation by public transportation was higher than the rate for the 10 largest metropolitan areas in the United States, with the exception of the District of Columbia, where 35.7 percent of the workforce commuted by public transportation (Source: U.S. Census Bureau, ACS, 2015–2019 5-Year Estimates).

The region's workforce living outside New York City has a lower rate of commutation by public transportation compared to New York City's resident-workers. The workforce living in Fairfield and New Haven Counties in Connecticut has the lowest rate of commutation by public transportation in the region at about 7 percent, followed by Long Island counties (12 percent) and the region's New Jersey counties and counties north of New York City (both 14 percent). The primary reasons for these lower rates are threefold:

- A higher percentage of the workforce living outside New York City does not commute to the Manhattan CBD, but rather, they commute to less transit-accessible locations outside New York City. Over 90 percent of the region's workforce living outside New York City, and 75 percent of New York City residents commute to jobs located outside of the Manhattan CBD.
- The region's public transportation system is not as readily accessible outside New York City. For example, east–west travel by transit in Westchester County often requires circuitous routes via Metro-North Railroad into Manhattan (125th Street or Grand Central Station) to switch lines or by limited east–west bus routes.
- Workforce members living outside of New York City are more likely to live in households with an available vehicle, leading to a higher propensity to drive to work irrespective of public transportation options. Outside of New York City within the region, approximately 94 percent of the workforce live in households that have access to at least one vehicle; within New York City, approximately 55 percent of the workforce live in households with access to at least one vehicle.[20]

Given the breadth of public transportation options to, from, and within the Manhattan CBD, workers commuting to the Manhattan CBD have a much lower rate of auto commuting relative to the broader regional and New York City workforce. As shown in **Table 6-6**, approximately 53 percent of all regional workforce members drive to work alone. For New York City residents in the workforce, approximately 22 percent drive to work alone, while only 9 percent of Manhattan CBD jobs are held by workers who drive to work alone.

Table 6-6. Means of Transportation to Work for the Regional Study Area and New York City Workforce vs. Commuters to the Manhattan CBD

WORKER TYPE	CAR, TRUCK, OR VAN (Drove Alone)	CAR, TRUCK, OR VAN (Carpooled)	PUBLIC TRANSPORTATION (Excluding Taxi)	WALKED	TAXICAB, MOTORCYCLE, BICYCLE, OR OTHER MEANS[1]	WORKED AT HOME
Regional Workforce	52.6%	6.6%	28.5%	5.5%	2.1%	4.6%
New York City Workforce	22.3%	4.5%	56.0%	10.0%	3.0%	4.3%
Commuters to the Manhattan CBD	9.0%	2.3%	85.7%	1.2%	1.8%	N/A

Sources: Regional and New York City workforce data from U.S. Census Bureau, ACS 2015–2019 5-Year Estimates; Manhattan CBD data from U.S. Census Bureau, CTPP, 2012–2016.
Note: Percentages may not sum to 100 percent due to rounding.
[1] The source ACS survey does not include a FHV category, only "car, truck, or van" and "taxicab." Those commuting by FHV may select taxicab or car, truck, or van, depending on how they interpret the survey question.

[20] U.S. Census Bureau, ACS, 2015–2019 5-Year Estimates, Table B08014. **Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion,"** provides additional information on vehicle ownership within the region.

6.3.2.3 Means of Transportation to Work for Different Industry Categories

Table 6-7 presents how the region's workforce commutes to work based on the type of industry in which they are employed. Those NAICS industry categories with the lowest rates of commutation by public transportation—Armed Forces (12 percent) and Agriculture, Forestry, Fishing and Hunting, and Mining (13 percent)—have notably higher rates of working from home (both about 11 percent, compared to under 5 percent for the region).[21] Armed forces workers also have the highest rate of walking to work, likely because many workers live at a military base. Other NAICS industry categories with relatively low rates of commutation by public transit include Manufacturing (17 percent); Wholesale Trade (20 percent); Transportation and Warehousing, and Utilities (21 percent); and Construction (24 percent). These industries are not concentrated in the Manhattan CBD, which is highly accessible via public transportation. Many industries within these categories require facilities with large footprints, which are less likely to be within dense urban areas that are highly transit-accessible. Conversely, those industry categories with the highest rates of commutation by public transportation—including Information (42 percent); Finance and Insurance, and Real Estate and Rental and Leasing (39 percent); and Arts, Entertainment, and Recreation, and Accommodation and Food Services (36 percent)—are all industries with a high concentration of jobs in Manhattan, which is highly accessible via public transportation.

[21] U.S. Census Bureau, ACS 5-Year Estimates 2015–2019, Means of Transportation to Work, Workers 16 years and over. The 2019 ACS estimates are from prior to the onset of the COVID-19 pandemic, and therefore do not reflect the substantial increase in work-from-home rates since the onset of the pandemic. Now that residents may again travel freely and many businesses have resumed operations, activity levels have been increasing. At this time, it would be speculative to estimate long-term (post-pandemic) work-from-home rates for the region.

Table 6-7. Means of Transportation to Work for Regional Study Area Employed Workforce by NAICS Industry Category

NAICS CODES	INDUSTRY CATEGORIES	CAR, TRUCK, OR VAN (Drove Alone)	CAR, TRUCK, OR VAN (Carpooled)	PUBLIC TRANSPORTATION (Excluding Taxi)	WALKED	TAXICAB, MOTORCYCLE, BICYCLE, OR OTHER MEANS[1]	WORKED AT HOME
11, 21	Agriculture, forestry, fishing and hunting, and mining	59.2%	8.4%	12.5%	6.3%	2.2%	11.3%
23	Construction	56.4%	11.7%	23.8%	2.6%	2.0%	3.5%
31–33	Manufacturing	64.7%	9.2%	16.9%	3.4%	1.9%	4.0%
42	Wholesale trade	61.3%	7.5%	20.2%	3.3%	1.7%	6.1%
44–45	Retail trade	54.5%	7.2%	26.2%	7.1%	2.1%	2.9%
48–49, 22	Transportation and warehousing, and utilities	64.3%	6.4%	21.3%	2.9%	2.8%	2.4%
51	Information	38.7%	3.8%	42.3%	5.1%	2.5%	7.6%
52–53	Finance and insurance, and real estate and rental and leasing	42.3%	4.0%	39.4%	5.7%	2.2%	6.4%
54–56	Professional, scientific, and management, and administrative and waste management services	42.5%	5.5%	35.0%	4.9%	2.3%	9.8%
61–62	Educational services, and health care and social assistance	57.7%	6.3%	25.1%	6.3%	1.7%	2.9%
71–72	Arts, entertainment, and recreation, and accommodation and food services	41.6%	7.3%	35.8%	8.3%	3.4%	3.6%
81	Other services (except public administration)	48.9%	7.8%	28.4%	7.7%	2.2%	5.0%
92	Public administration	64.7%	5.5%	24.5%	2.8%	1.0%	1.5%
928110	Armed forces	56.7%	4.5%	11.8%	13.4%	2.9%	10.7%
	TOTAL	**52.6%**	**6.6%**	**28.5%**	**5.5%**	**2.1%**	**4.6%**

Source: U.S. Census Bureau, ACS, 2015–2019 5-Year Estimates.
Notes: Industry category percentages may not sum to 100 percent due to rounding.
[1] The source ACS does not include a FHV category, only "car, truck, or van" and "taxicab." Those commuting by FHV may select taxicab or car, truck, or van, depending on how they interpret the survey question.

6.3.2.4 *Commuting Into, Out of, and Within the Manhattan CBD*

Given that the Project would directly affect workers who drive into, out of, and within the Manhattan CBD, this section evaluates auto commuters who are concentrated in any specific regional industries, with particular focus on jobs within the Manhattan CBD. The most recent ACS provides limited data describing the workplace industry and occupational categories of workers commuting via automobile (not including taxis); estimates for the Manhattan CBD alone are not available. The most detailed estimates describe only those working in Manhattan as a whole, but these data reveal a correlation between commute mode and employment categories. As shown in **Table 6-8**, the rate of workers driving to Manhattan jobs is highest in industry categories representing small fractions of all Manhattan jobs (see **Figure 6-3**). This is especially true for Manhattan workers holding jobs in the Transportation, Warehousing, and Utilities category. Fewer than 4 percent of Manhattan workers hold jobs within these industries, but nearly 35 percent of those workers drive to work.

Table 6-8. Manhattan Workers Who Commute by Auto by NAICS Industry Category

NAICS CODES	INDUSTRY CATEGORIES	MANHATTAN WORKERS	PERCENTAGE OF ALL MANHATTAN WORKERS	PERCENTAGE OF WORKERS IN INDUSTRY COMMUTING BY AUTO
11, 21	Agriculture, forestry, fishing and hunting, and mining	1,914	0.1%	22.2%
23	Construction	101,647	4.1%	25.5%
31–33	Manufacturing	77,446	3.1%	11.8%
42	Wholesale trade	51,839	2.1%	14.0%
44–45	Retail trade	197,906	7.9%	8.3%
48–49, 22	Transportation and warehousing, and utilities	85,112	3.4%	33.7%
51	Information	153,225	6.1%	9.0%
52–53	Finance and insurance, and real estate and rental and leasing	400,242	16.0%	9.6%
54–56	Professional, scientific, and management, and administrative and waste management services	486,114	19.5%	8.0%
61–62	Educational services, and health care and social assistance	458,573	18.4%	13.7%
71–72	Arts, entertainment, and recreation, and accommodation and food services	279,446	11.2%	8.1%
81	Other services (except public administration)	108,712	4.4%	11.8%
92	Public administration	93,187	3.7%	28.4%
928110	Armed forces	806	<0.1%	21.0%
	TOTAL	**2,496,169**	**100.0%**	**12.2%**

Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.
Note: Percentage of all Manhattan workers may not sum to 100 percent due to rounding.

Within SOC grouped occupational categories, approximately 12 percent of all Manhattan workers drive to their jobs, but within certain occupational groupings, nearly 30 percent drive (**Table 6-9**). These SOC occupational groups (Military Specific occupations; Natural Resources, Construction, and Maintenance occupations; and Production, Transportation, and Material Moving occupations) include many different job classifications but together account for fewer than 10 percent of the jobs held by Manhattan workers.

Table 6-9. Standard Occupational Classification Categories for Manhattan Workers Who Commute by Auto

SOC GROUPS	OCCUPATIONAL CATEGORIES	MANHATTAN WORKERS	PERCENTAGE OF ALL MANHATTAN WORKERS	PERCENTAGE OF MANHATTAN WORKERS IN OCCUPATION COMMUTING BY AUTO
11–29	Management, business, science, and arts	1,274,070	51.0%	10.4%
31–39	Service occupations	433,439	17.4%	12.2%
41–43	Sales and office occupations	546,553	21.9%	9.6%
45–49	Natural resources, construction, and maintenance occupations	116,716	4.7%	27.0%
51–53	Production, transportation, and material moving occupations	124,986	5.0%	27.5%
55	Military specific occupations	405	<0.1%	29.1%
	TOTAL	**2,496,169**	**100.0%**	**12.2%**

Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.
Note: SOC data is not available at the level of detail provided in **Table 6-3** due to cross-tabulation by mode of transportation to work. The percentage of all Manhattan workers may not sum to 100 percent due to rounding.

Commuters to the Manhattan CBD

The following analysis provides insight on modal trends and identifies whether specific industries and occupations could be adversely affected by the CBD Tolling Alternative.[22] The data presented in **Table 6-2 and Table 6-3** describe jobs held by all Manhattan CBD workers. Commuters to the Manhattan CBD can be divided in two categories:

- Those commuting from residences outside the Manhattan CBD (Manhattan CBD commuters)
- Those commuting from residences within the Manhattan CBD (Manhattan CBD resident-workers)

Nearly 1.3 million workers (approximately 83 percent) are Manhattan CBD commuters, traveling to jobs within the Manhattan CBD from residences across the 28-county region.[23] The remaining, approximately

[22] For estimates specific to those workers commuting from outside the Manhattan CBD (and within the 28-county region) to jobs within the Manhattan CBD, the CTPP provides data products describing the employed labor force's commuting patterns, mode of travel to work, and industry/occupation sector distribution. Data tables are published at various geographic levels down to the census tract. The most recent estimates are based on the ACS 2012–2016 5-Year Estimates and reported in three parts: Part 1, by worker residence of origin; Part 2, by worker job location destination; and Part 3, paired by worker origin and destination. The availability and provided detail of the estimates are dependent on the CTPP part, geographic-level of detail, and number of variables cross-tabulated. The most detailed estimates of industry, occupation, and commuting mode of New York City workers are available only for Part 1 and Part 2 at the county level. The Part 1 and Part 2 estimates also provide detailed industry and occupation information for all workers residing in the 28-county region or those working within the Manhattan CBD. However, only CTPP Part 3 provides estimates specifically describing workers who commute to inside the Manhattan CBD from residences within the 28-county region. Isolated estimates of detailed industry/occupation by mode for Manhattan CBD workers commuting from outside the Manhattan CBD are not provided by the CTPP. However, the CTPP does provide detailed estimates of these variables without cross-tabulation.

[23] U.S. Census Bureau, CTPP, 2012–2016, Part 3.

one-fifth, of Manhattan CBD workers live within the Manhattan CBD and therefore are Manhattan CBD resident-workers.

Within the NAICS industry category groupings, all Manhattan CBD workers and Manhattan CBD commuters are distributed among industries at nearly the same rates (**Table 6-10**).

Table 6-10. Industry Categories for Manhattan CBD Workers and Manhattan CBD Commuters

NAICS CODES	INDUSTRY CATEGORIES	MANHATTAN CBD WORKERS	PERCENTAGE OF MANHATTAN CBD WORKERS BY INDUSTRY	COMMUTERS TO THE MANHATTAN CBD FROM ELSEHWERE	PERCENTAGE OF COMMUTERS TO MANHATTAN CBD BY INDUSTRY
11, 21, 23, 928110	Agriculture, forestry, fishing and hunting, and mining; + construction; + armed forces	44,087	2.8%	39,830	3.1%
31–33	Manufacturing	55,013	3.5%	45,848	3.6%
42, 44–45, 48–49, 22	Wholesale trade; + retail trade; + transportation and warehousing, and utilities	198,595	12.8%	168,195	13.3%
51, 52–53, 54–56	Information; + finance, insurance, real estate and rental and leasing; + professional, scientific, management, administrative, and waste management services	792,491	51.0%	619,984	48.9%
61–62	Educational, health and social services	192,030	12.4%	162,356	12.8%
71–72	Arts, entertainment, recreation, accommodation and food services	150,708	9.7%	127,069	10.0%
81, 92	Other services (except public administration); + public administration	121,444	7.8%	105,212	8.3%

Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.
Notes: Percentages may not sum to 100 percent due to rounding.

Approximately 99 percent of Manhattan CBD workers—and approximately 99 percent of the subset who commute from outside the Manhattan CBD—have jobs that are within one-half mile or about a 15-minute walk of a subway station or Select Bus Service (SBS) stop within the Manhattan CBD.[24] All of these jobs are within one-half mile of local bus service and/or ferry service. Based on FHWA Pedestrian Safety Guide for Transit Agencies, most people are willing to walk for 5 to 10 minutes, or approximately one-quarter to one-half mile to a transit stop, and people may be willing to walk considerably longer distances when accessing heavy rail services.[25] A 15-minute walk is considered reasonable for most trip purposes.[26] **Subchapter 4C, "Transportation: Transit,"** describes the regional transit network. The estimated 8,470 Manhattan CBD

[24] Express bus service from specific destinations outside the Manhattan CBD, such as bus routes from Staten Island and Queens, also serves the Manhattan CBD. Since these routes are from specific destinations and not available for other commuters within the Manhattan CBD, express bus stops within the Manhattan CBD are not included in this discussion.

[25] https://safety.fhwa.dot.gov/ped_bike/ped_transit/ped_transguide/ch4.cfm#a.

[26] Yong Yang, PhD and Ana V. Diez-Roux, PhD, MD. "Walking Distance by Trip Purpose and Population Subgroups." *American Journal of Preventative Medicine*. March 2012. https://www.ajpmonline.org/article/S0749-3797(12)00240-1/fulltext.

employees who work greater distances from a subway station or SBS stop have a relatively high rate of auto commuting (1,770, or almost 15 percent, drive to work) but represent small fractions of all Manhattan CBD workers within any specific industry and occupational category (**Table 6-11**). When compared to the Manhattan CBD as a whole, workers traveling to Manhattan CBD locations farther from public transportation disproportionately hold jobs in the Information industry. An estimated 2,595 workers employed in Census Tract 135 in West Midtown (bounded by West 58th Street to the north, Tenth Avenue to the east, West 50th Street to the south, and the Hudson River to the west; **Figure 6-4**) are employed in the Information industry and represent 2.2 percent of all workers in the Manhattan CBD in the same industry. Census Tract 135 is home to several broadcasting studios.[27] Collectively the 8,470 workers account for less than 1 percent of Manhattan CBD employment across all industry and occupational categories.

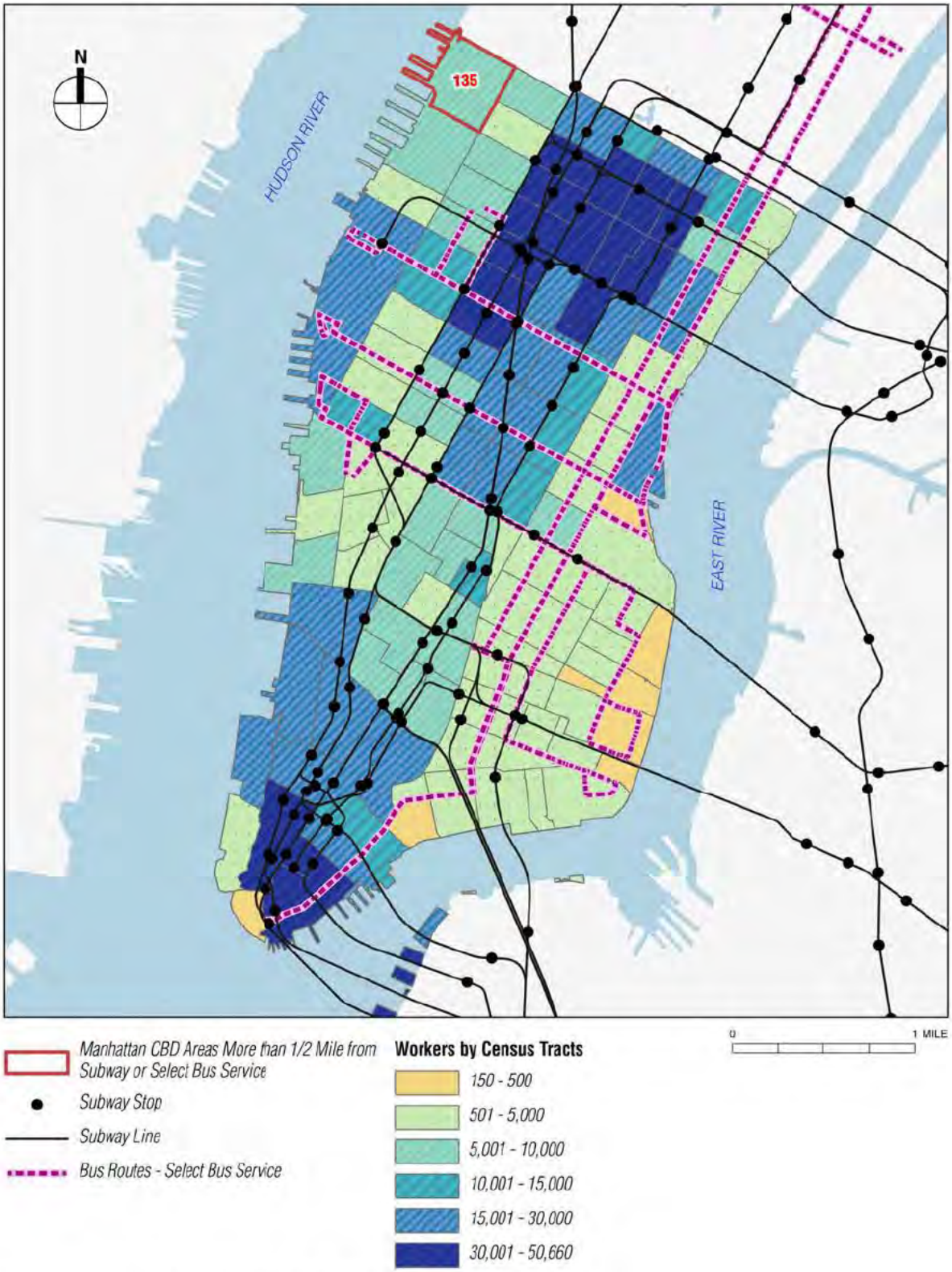
Table 6-11. Industry Categories for Manhattan CBD Jobs in Census Tracts More than One-Half Mile from a Subway or Select Bus Service Bus Stop

NAICS CODES	INDUSTRY CATEGORIES	JOBS WITHIN MANHATTAN CBD MORE THAN ONE-HALF MILE FROM SUBWAY STATION OR SBS BUS STOP	JOBS AS A PERCENTAGE OF ALL MANHATTAN CBD JOBS WITHIN INDUSTRY CATEGORY
11, 21	Agriculture, forestry, fishing and hunting, and mining	10	0.9%
23	Construction	310	0.8%
31–33	Manufacturing	365	0.7%
42	Wholesale trade	140	0.4%
44–45	Retail trade	1,080	1.0%
48–49, 22	Transportation and warehousing, and utilities	220	0.6%
51	Information	2,595	2.2%
52–53	Finance, insurance, real estate and rental and leasing	410	0.1%
54–56	Professional, scientific, management, administrative, and waste management services	1,065	0.3%
61–62	Educational, health and social services	1,415	0.7%
71–72	Arts, entertainment, recreation, accommodation and food services	565	0.3%
81	Other services (except public administration)	230	0.5%
92	Public administration	65	0.1%
928110	Armed forces	0	0.0%
	AREA ESTIMATE*	**8,470**	**0.5%**

Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.
Note: CTPP estimates for industry and occupational categories are derived separately from CTPP estimates of all workers within the same geographic area; therefore, the sum total of industry-level estimates may not equal the estimate for all workers.

[27] Broadcasting and telecommunications industries are subsets of the Information NAICS industry category.

Figure 6-4. Number of Manhattan Workers in Manhattan CBD Areas and Proximity to Subway Stops and Select Bus Service Routes



Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.

Car Commuters to the Manhattan CBD

As established in Chapter 1, "Introduction," approximately 142,500 workers commute to the Manhattan CBD from around the region by car. Of these, more than one-third (approximately 57,000) drive from residences in New York City that are within one-half mile of a rail (commuter rail, subway, or Staten Island Railway) station, express bus stop, or SBS bus stop. Most of these workers have a relatively close option of using public transportation to reach the Manhattan CBD. The remaining car commuters to the Manhattan CBD originate from areas of New York City that are farther from public transportation, and from all other municipalities within the 28-county region (irrespective of proximity to public transportation).

Manhattan CBD Locations with the Largest Numbers of Car Commuters

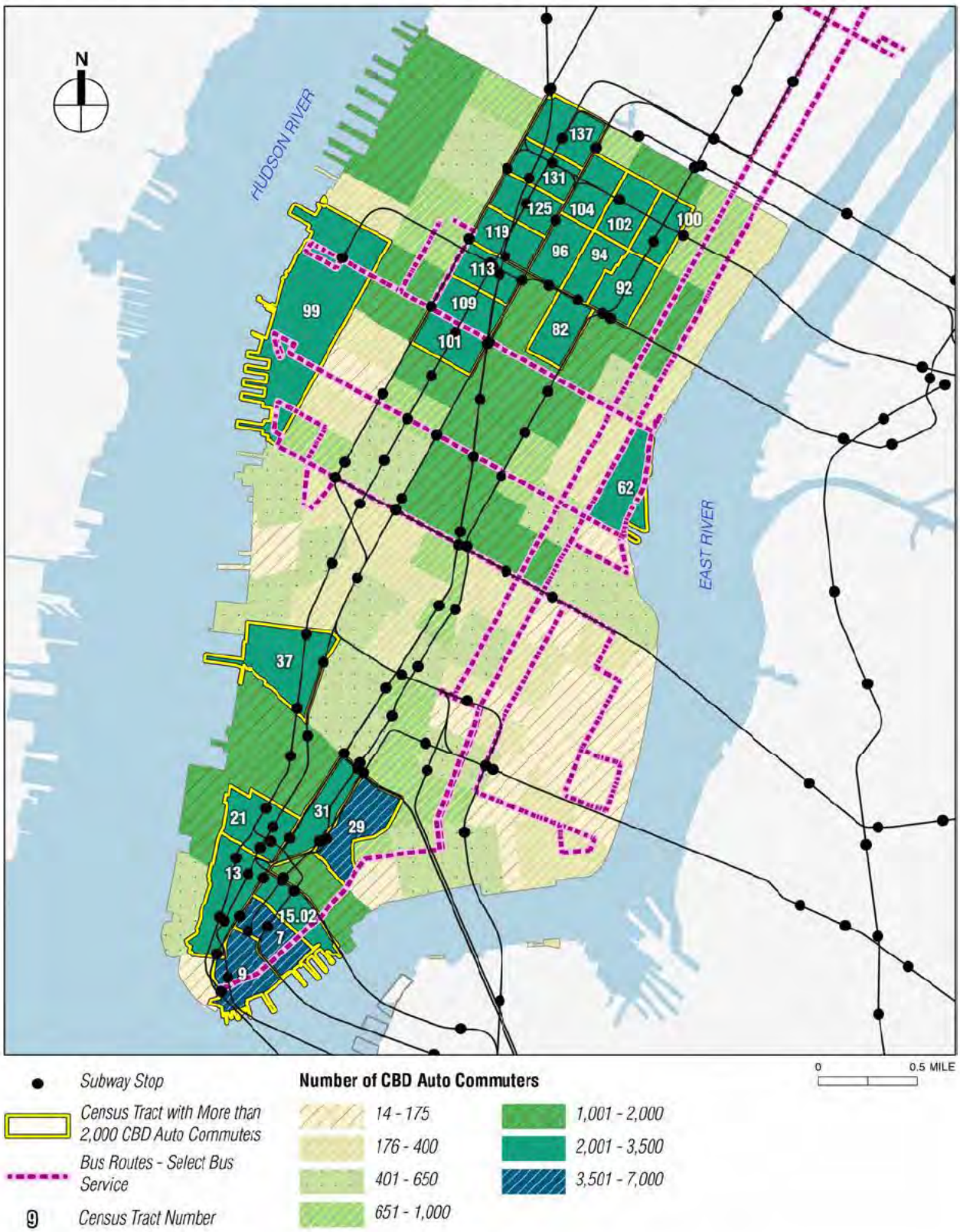
In terms of absolute numbers, car commuters to the Manhattan CBD generally drive to jobs in neighborhoods with high employment density, including central Midtown and Lower Manhattan (Figure 6-5). While the Manhattan CBD has 125 census tracts and covers approximately 9 square miles, approximately one-half (50.7 percent) of car commuters to the Manhattan CBD drive to jobs inside one of just 23 census tracts in the Manhattan CBD that occupy an area one-quarter the size of the entire Manhattan CBD. These census tracts are also the destination for over half (52.7 percent) of all Manhattan CBD workers, not including those working from home. Within the 23 census tracts with the largest numbers of car commuters, jobs are distributed among industries and occupations at rates similar to industry and occupational distribution across the entire Manhattan CBD (Table 6-12), suggesting that no industry or occupational categories are within this area for which commuters have a greater propensity or need to commute by auto.[28] It also suggests that the disproportionately high rate of Information industry workers in Census Tract 135 (on the far West Side and more distant from faster modes of public transportation) are not dependent upon the ability to commute by auto for industry-specific needs.

One notable exception (see Table 6-12) is the NAICS Finance, Insurance, Real Estate and Rental and Leasing industry category, which employs one-quarter of the workers in those 23 census tracts while this industry category accounts for one-fifth of the employment within the Manhattan CBD as a whole. Given the large number of employees within the census tracts, it is difficult to draw conclusions as to whether workers within this industry category have a higher rate of auto commuting.

As shown in Table 6-13, within the same 23 census tracts that have the highest number of car commuters, jobs are divided among occupations at percentages similar to the Manhattan CBD as a whole. However, the SOC Business and Financial Operations Specialists occupational category and the Legal occupational category have a slightly higher percentage of the jobs in the 23 census tracts than in the Manhattan CBD overall.

[28] Origin-destination estimates by industry are not available by mode for this unique geography, limiting the ability to draw more definitive conclusions from this data with respect to a correlation between industry types and auto commuting within the Manhattan CBD.

Figure 6-5. Number of Commuters Who Drive to Locations in the Manhattan CBD



Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.

Table 6-12. Industry Categories for Jobs in 23 Manhattan CBD Census Tracts with the Largest Numbers of Car Commuters

NAICS CODES	INDUSTRY CATEGORIES	WORKERS IN 23 CENSUS TRACTS[1]	PERCENTAGE OF WORKERS IN 23 CENSUS TRACTS	COMPARISON: PERCENTAGE OF WORKERS IN INDUSTRY CATEGORY, ALL MANHATTAN CBD WORKERS
11, 21	Agriculture, forestry, fishing and hunting, and mining	535	<0.1%	0.1%
23	Construction	20,450	2.6%	2.7%
31-33	Manufacturing	23,760	3.0%	3.5%
42	Wholesale trade	16,375	2.1%	2.5%
44-45	Retail trade	46,195	5.8%	7.6%
48-49, 22	Transportation and warehousing, and utilities	18,860	2.4%	2.7%
51	Information	63,925	8.0%	7.8%
52-53	Finance, insurance, real estate and rental and leasing	201,760	25.3%	19.7%
54-56	Professional, scientific, management, administrative, and waste management services	202,405	25.4%	23.5%
61-62	Educational, health and social services	71,485	9.0%	12.4%
71-72	Arts, entertainment, recreation, accommodation and food services	64,765	8.1%	9.7%
81	Other services (except public administration)	21,400	2.7%	3.5%
92	Public administration	45,150	5.7%	4.4%
928110	Armed forces	142	<0.1%	<0.1%

Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.

[1] **Figure 6-5** identifies the 23 census tracts for which data is presented.

Table 6-13. Standard Occupational Classification Categories of Jobs in the 23 Manhattan CBD Census Tracts with the Largest Numbers of Car Commuters

SOC GROUPS	OCCUPATIONAL CATEGORIES	WORKERS IN 23 CENSUS TRACTS[1]	PERCENTAGE OF ALL WORKERS IN 23 CENSUS TRACTS	PERCENTAGE OF ALL MANHATTAN CBD WORKERS
11-0000	Management occupations	146,770	18.4%	17.6%
13-0000	Farmers and farm managers	55	<0.1%	<0.1%
15-0000	Business and financial operations specialists	116,260	14.6%	12.1%
17-0000	Computer and mathematical occupations	48,225	6.0%	5.6%
19-0000	Architecture and engineering occupations	12,590	1.6%	1.6%
21-0000	Life, physical, and social science occupations	5,735	0.7%	0.8%
23-0000	Community and social service occupations	7,840	1.0%	1.2%
25-0000	Legal occupations	48,845	6.1%	4.6%
27-0000	Education, training, and library occupations	14,845	1.9%	3.0%
29-0000	Arts, design, entertainment, sports, and media occupations	50,320	6.3%	7.5%
31-0000	Healthcare practitioners and technicians occupations	18,415	2.3%	2.6%
33-0000	Healthcare support occupations	8,795	1.1%	1.4%
35-0000	Protective service occupations	23,100	2.9%	2.5%
37-0000	Food preparation and serving related occupations	25,765	3.2%	4.2%
39-0000	Building and grounds cleaning and maintenance occupations	21,060	2.6%	2.8%
41-0000	Personal care and service occupations	12,340	1.5%	2.2%
43-0000	Sales and related occupations	84,920	10.7%	11.0%
45-0000	Office and administrative support occupations	100,205	12.6%	12.3%
47-0000	Farming, fishing, and forestry occupations	184	<0.1%	<0.1%
49-0000	Construction and extraction occupations	15,815	2.0%	2.1%
51-0000	Installation, maintenance, and repair occupations	7,660	1.0%	1.0%
53-0000	Production occupations	12,820	1.6%	1.8%
55-0000	Transportation and material moving occupations	14,605	1.8%	2.1%
	Armed forces	77	<0.1%	<0.1%

Source: U.S. Census Bureau, CTPP, 2012–2016, Part 2.

[1] **Figure 6-5** identifies the 23 census tracts for which data is presented.

By far, the greatest number of car commuters to the Manhattan CBD drive to jobs in Census Tract 29 in Lower Manhattan (see **Figure 6-5**). Census Tract 29 is north of the Brooklyn Bridge approach ramps and extends north to Canal Street. The tract includes parts of Chinatown and several large municipal buildings including 1 Centre Street, the Jacob Javits Federal Building, and the New York City Police Department (NYPD) headquarters. Of the estimated 16,453 workers commuting to jobs in Census Tract 29 from outside the Manhattan CBD, an estimated 6,832 workers (over 40 percent) drive to work. Approximately 50 percent more car commuters to the Manhattan CBD work in Census Tract 29 than in either Census Tracts 7 or 9, which have the second- and third-highest number of car commuters to the Manhattan CBD (4,561 and 4,345, respectively). Roughly 40 percent of those working in Census Tract 29 are employed in protective service occupations, a category including NYPD officers. Over the entire Manhattan CBD, only 2.5 percent of jobs are in this occupational category.

Manhattan CBD Locations with the Highest Percentages of Car Commuters

The previous section considered total volumes of car commuters; this section considers areas with the highest proportions of car commuters, irrespective of volume. Across different neighborhoods of the Manhattan CBD, the percentage of commuters originating from outside the Manhattan CBD who drive to work varies. Considering the locations where higher percentages of commuters drive to work could reveal whether specific industry types are correlated with the larger driving share for commuters.

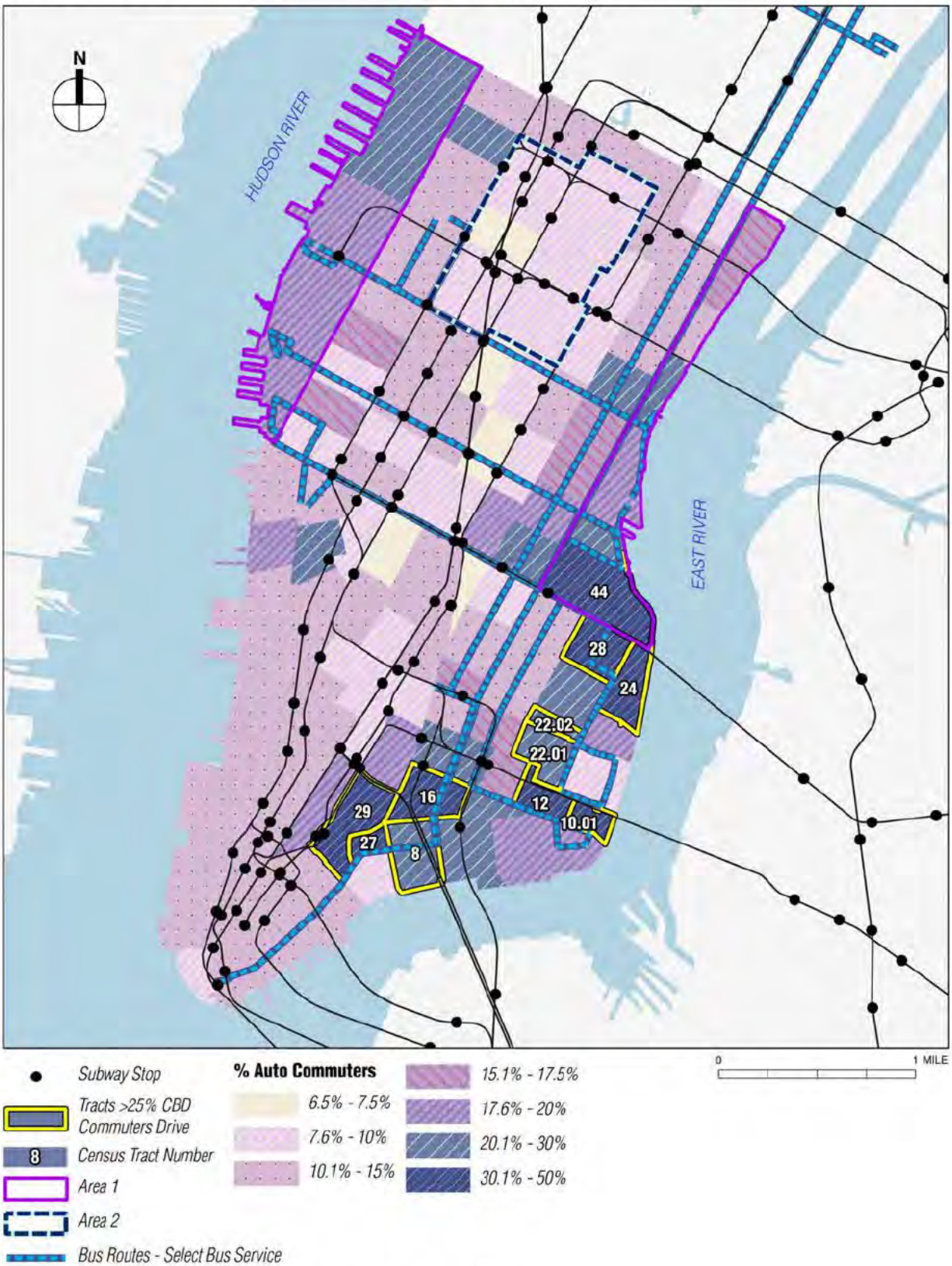
As shown in Figure 6-6, CTPP data indicate that in general, the percentage of Manhattan CBD commuters driving to work correlates roughly with the distance of their job location from major transit hubs. This trend is particularly apparent in the areas of Midtown Manhattan north of 14th Street that are near the East River and the Hudson River, where more commuters drive to work than in the Midtown core. In the areas of the Manhattan CBD farther from major transit hubs and closer to the East River and the Hudson River (Figure 6-6, Area 1), 63,036 workers commute from outside the Manhattan CBD and approximately 19 percent of them drive to work. In the area between Third Avenue and Eighth Avenue (Figure 6-6, Area 2), approximately 8 percent of commuters coming from outside the Manhattan CBD drive to work.

The area of the Manhattan CBD with the highest rate of commuters by auto from locations outside the Manhattan CBD is an area of 11 census tracts in Manhattan's East Village and Lower East Side neighborhoods, including a portion of Chinatown (Figure 6-6). In each of these 11 census tracts, at least one-quarter of workers commuting from outside the Manhattan CBD drive to their jobs. Approximately 26,000 total workers commute to jobs in these 11 census tracts from outside the Manhattan CBD, which is just over 2 percent of all workers commuting into the Manhattan CBD from outside the Manhattan CBD. Of those, an estimated 10,416 workers (about 40 percent) drive to work from outside the Manhattan CBD.

Within the 11 census tracts with the highest rates of drivers, nearly half of all workers are employed in the public administration industry, while only 4 percent of all Manhattan CBD workers are employed in this industry (Table 6-14). Within NAICS occupational categories, over one-quarter of workers in the 11 census tracts are employed in protective service occupations, compared to under 3 percent across the Manhattan CBD (Table 6-15). The higher rate of auto commuting to these census tracts, and the high volume of auto commuting to Census Tract 29, are likely due to the availability of free parking and/or parking placards for some public administration employees.[29] The number of workers employed in Management, Business and Financial Operations Specialists, and Sales occupations are notably lower in these census tracts than in the Manhattan CBD overall.

[29] Those who work for a government agency, the New York City Department of Education, clergy, non-profit organizations, or individuals with severe disabilities may be eligible to apply for a New York City parking permit (or "placard"). About 150,000 City of New York-issued parking permits are in circulation. Various permits are available, depending on the needs and occupation of the driver. Parking permits are generally rectangular placards that drivers place on their car's dashboard. Displaying these permits allows drivers to forgo certain parking restrictions. Some may also allow drivers to park in certain "No Parking" zones or "Authorized Vehicle Only" zones. Depending on the permit, drivers can park for a specified amount of the time without getting a parking ticket. This may include hours designated for alternate-side parking. The permits also allow drivers to park in spaces specifically designated for certain occupations. This may include drivers who are part of the press, non-profit organizations, physicians, and government workers. Usually "Authorized Parking Only" signs will specify the type of permit holder allowed to use the space. (Source: https://parkingtickets.org/ny-new-york/nyc-parking-permit.)

Figure 6-6. Percentage of Commuters Who Drive to Locations in the Manhattan CBD



Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.

Table 6-14. Industry Categories of Jobs in the 11 Manhattan CBD Census Tracts with the Highest Percentage of Car Commuters

NAICS CODES	INDUSTRY CATEGORIES	WORKERS IN 11 CENSUS TRACTS[1]	PERCENTAGE OF WORKERS IN 11 CENSUS TRACTS	COMPARISON: PERCENTAGE OF WORKERS IN INDUSTRY CATEGORY, ALL MANHATTAN CBD WORKERS
11, 21	Agriculture, forestry, fishing and hunting, and mining	35	0.1%	0.1%
23	Construction	613	1.9%	2.7%
31–33	Manufacturing	659	2.0%	3.5%
42	Wholesale trade	363	1.1%	2.5%
44–45	Retail trade	1,645	5.0%	7.6%
48–49, 22	Transportation and warehousing, and utilities	1,074	3.3%	2.7%
51	Information	254	0.8%	7.8%
52–53	Finance, insurance, real estate and rental and leasing	2,164	6.6%	19.7%
54–56	Professional, scientific, management, administrative, and waste management services	3,255	10.0%	23.5%
61–62	Educational, health and social services	4,755	14.6%	12.4%
71–72	Arts, entertainment, recreation, accommodation and food services	2,260	6.9%	9.7%
81	Other services (except public administration)	899	2.8%	3.5%
92	Public administration	14,690	45.0%	4.4%
928110	Armed forces	4	<0.1%	<0.1%

Source: U.S. Census Bureau, CTPP, 2012–2016, Parts 2 and 3.

[1] **Figure 6-6** identifies the 11 census tracts for which data is presented.

Table 6-15. Standard Occupational Classification Categories of Jobs in the 11 Manhattan CBD Census Tracts with the Highest Proportions of Car Commuters

SOC GROUPS	OCCUPATIONAL CATEGORIES	WORKERS IN 11 CENSUS TRACTS[1]	PERCENTAGE OF WORKERS IN 11 CENSUS TRACTS	PERCENTAGE OF ALL MANHATTAN CBD WORKERS
11-0000	Management occupations	2,659	8.1%	17.6%
13-0000	Farmers and farm managers	0	0.0%	<0.1%
15-0000	Business and financial operations specialists	965	3.0%	12.1%
17-0000	Computer and mathematical occupations	844	2.6%	5.6%
19-0000	Architecture and engineering occupations	224	0.7%	1.6%
21-0000	Life, physical, and social science occupations	205	0.6%	0.8%
23-0000	Community and social service occupations	715	2.2%	1.2%
25-0000	Legal occupations	2,035	6.2%	4.6%
27-0000	Education, training, and library occupations	1,654	5.1%	3.0%
29-0000	Arts, design, entertainment, sports, and media occupations	1,035	3.2%	7.5%
31-0000	Healthcare practitioners and technicians occupations	734	2.2%	2.6%
33-0000	Healthcare support occupations	799	2.4%	1.4%
35-0000	Protective service occupations	9,055	27.7%	2.5%
37-0000	Food preparation and serving related occupations	1,490	4.6%	4.2%
39-0000	Building and grounds cleaning and maintenance occupations	870	2.7%	2.8%
41-0000	Personal care and service occupations	765	2.3%	2.2%
43-0000	Sales and related occupations	2,050	6.3%	11.0%
45-0000	Office and administrative support occupations	4,089	12.5%	12.3%
47-0000	Farming, fishing, and forestry occupations	25	<0.1%	<0.1%
49-0000	Construction and extraction occupations	509	1.6%	2.1%
51-0000	Installation, maintenance, and repair occupations	460	1.4%	1.0%
53-0000	Production occupations	639	2.0%	1.8%
55-0000	Transportation and material moving occupations	855	2.6%	2.1%
	Armed forces	4	<0.1%	<0.1%

Source: U.S. Census Bureau, CTPP, 2012–2016, Part 2.

[1] **Figure 6-6** identifies the 11 census tracts for which data is presented.

Two of the census tracts in this area—Census Tracts 24 and 44 encompassing Stuyvesant Town, Jacob Riis Houses, and the Con Edison East River Generating Station (**Figure 6-6**)—have a particularly high percentage of commuters who drive. In these two census tracts, employees drive to work at nearly four times the average rate of the Manhattan CBD.[30] Despite this large percentage, these census tracts represent a small number of total car commuters to the Manhattan CBD (1,090 workers). More than 25 percent of jobs within these census tracts are in the Transportation, Warehousing and Utilities industry category, which includes jobs at the Con Edison Generating Station (the area's largest employer), as well as a New York City Department of Environmental Protection pumping station. Both facilities include large employee parking

[30] This information reflects conditions prior to implementation of an SBS route on the Lower East Side and the ferry stop along the East River serving Stuyvesant Town.

lots, suggesting that the availability of free employee parking could be encouraging workers to travel by car to their jobs. This area also has more available, free on-street parking relative to most locations within the Manhattan CBD because of its distance from the denser commercial areas. Based on CTPP 2012–2016 data, nearly 75 percent of car commuters to this area arrive at work before 8:00 a.m., which would allow them to avoid peak rush-hour conditions and more easily secure free on-street parking; however, atypical arrival times are not consistently found across census tracts with high auto-commutation rates.

Manhattan CBD Reverse Commuters

Based on CTPP 2012–2016 data, an estimated 114,591 Manhattan CBD residents commute to work at jobs outside the Manhattan CBD, with a majority working in other areas of New York City that are within close proximity to faster modes of public transportation. An estimated 16,663 (approximately 14.5 percent) of these Manhattan CBD reverse commuters drive to their jobs. None of these drivers are estimated to originate from locations in the Manhattan CBD that are distant from faster modes of public transportation. Approximately 1,200 Manhattan CBD reverse commuters commute by car out of the Manhattan CBD to work at other locations in Manhattan that are within one-half mile of a subway station. Approximately 4,000 additional Manhattan CBD residents drive to work outside Manhattan to one of the four remaining New York City boroughs. Approximately 90 percent travel to jobs within areas of New York City that are within one-half mile of a faster public transportation (subway, railroad, or express or SBS bus stop) and 540 drive to jobs in New York City that are more distant from public transportation. The majority of these 540 drivers go to jobs in Brooklyn and Queens, where they represent about 2 percent of employment in each community district.[31]

About 6,700 Manhattan CBD reverse commuters drive to work in New Jersey, representing a tiny fraction of New Jersey's employment.[32] The majority of these drivers commute to jobs in Bergen, Essex, or Hudson Counties, where they make up less than 1 percent of employment in each county. There are five New Jersey municipalities where car commuters from the Manhattan CBD account for between 1 and 2 percent of all employees.

6.3.2.5 Non-Work-Related Journeys

In addition to work-related journeys[33] discussed in the previous sections, consumer spending associated with non-work-related activities (e.g., dining, retail, entertainment, and health care spending) plays a large role in the regional economy. Many industries—including most notably Retail Trade, Arts, Entertainment and Recreation, and Accommodation and Food Services—are heavily dependent upon non-work-related consumer expenditures. According to Esri Business Analyst estimates, residents within the regional study area spend more than $342 billion annually on retail goods (including food and drink). In addition to the region's resident spending, visitors to New York City spent $44.2 billion in 2018. It is therefore important

[31] U.S. Census Bureau, CTPP, 2012–2016, Part 3.

[32] This analysis focuses on the effect of changes to commuter patterns on economic conditions related to employment; therefore, this section discusses overall employment that could be affected.

[33] As described in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling,"** a journey is defined as round-trip travel between principal and anchor locations such as home, work, school, retail, and entertainment.

to consider whether the Project could alter non-work-related journeys within the region in a manner that could reduce spending and jeopardize the viability of any industry sectors.

6.3.2.6 Vehicle-Dependent Industries

While all industries are to a degree dependent on vehicle movement—for supplying workers, goods and services, and/or customers—the following sections discuss industries that have operations that inherently depend on the movement of vehicles into, out of, and through the Manhattan CBD. Because the Project would toll vehicles entering or remaining in the Manhattan CBD, the Project has the greatest potential to affect changes in consumer demand and/or operational conditions within these industries.[34] As noted in the *CEQR Technical Manual*, an assessment is appropriate if a project is expected to affect conditions within a specific industry; for example, a citywide regulatory change would adversely affect the economic and operational conditions of certain types of businesses or process may affect socioeconomic conditions in a neighborhood if (1) if a substantial number of residents or workers depend on the goods or services provided by the affected businesses; or (2) if it would result in the loss or substantial diminishment of a particularly important product or service within the city.[35]

Taxi and For-Hire Vehicle Industry

The following section describes the variety of taxis and FHVs:

- **Yellow cabs**: The New York City Taxi and Limousine Commission (TLC) has issued 13,587 medallions to allow drivers to operate yellow cabs throughout New York City. Fares for yellow cabs are metered based on rates set by the TLC. Some yellow cabs are owned and operated as part of a fleet and others are owned and operated independently. Some drivers may lease the medallion and the vehicle, others lease the medallion and own their vehicle, while other yellow cabs drivers own and operate their own medallion and vehicle. Passengers can arrange for service through street hails and through "e-hails" arranged through a mobile application by a TLC-approved company.
- **Green cabs**: The TLC created a program of street-hail livery cabs, also referred to as green cabs or borough taxis, in August 2013 to increase the availability of street-hail taxi service (rather than service available by calling in advance) outside of the core service area of Manhattan.[36] Street-hail livery cabs can accept trips in Manhattan north of East 96th Street and West 110th Street, and in any location in the boroughs outside of Manhattan. Green cabs can also pick up passengers at airports if the ride is pre-arranged through a dispatcher. Fares for street-hail trips are metered based on rates set by the TLC. Green cab drivers must use approved vehicles that meet specific requirements of the TLC but medallions are not required.

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[34] As detailed in **Chapter 2, "Project Alternatives,"** with the CBD Tolling Alternative, TBTA would toll vehicles entering or remaining in the Manhattan CBD via a cashless tolling system. At this time, the Project Sponsors consider vehicles that remain in the Manhattan CBD to be those that were not detected entering but must have been remaining in the Manhattan CBD since they were detected leaving.

[35] Chapter 5, Section 200 of the 2021 *CEQR Technical Manual*. As noted in Chapter 5, Section 430 of the 2021 *CEQR Technical Manual*, an impact of a project that would substantially impair the ability of certain specific industries or categories or business to continue operating within New York City may be considered significant and adverse.

[36] Prior to 2013, private livery cabs were offering non-metered and often informal and inconsistent ride services to residents and workers outside the core service area of Manhattan, raising equity and public safety concerns in these communities.

- FHVs: FHVs, also licensed by the TLC, include black cars, liveries, and limousines that provide pre-arranged service. FHVs cannot accept street hails and must operate through a dispatching base. Rides are typically pre-arranged through a smartphone app, website, or phone reservation (by individuals or, often, through contracts held by businesses). Customers can ride individually or set up shared rides with other customers making a similar trip. FHVs must be licensed by the TLC and can operate throughout New York City. FHV drivers either independently own or lease their own personal vehicles or lease a vehicle from a fleet. Some FHVs are licensed as "high-volume" FHVs, because they operate from bases that dispatch more than 10,000 trips a day. Lyft and Uber are examples of high-volume FHVs.[37]

According to the TLC's 2020 Fact Book, in 2019 there were 13,587 yellow cabs, 2,895 green cabs, and 101,663 FHVs licensed by the TLC.[38] In 2019 the TLC licenses more than 118,000 vehicles and nearly 185,000 drivers in total. In April 2022, there were 7,053 yellow cabs, 1,027 green cabs, and 70,281 FHVs that made at least one trip. As detailed in Chapter 17, "Environmental Justice," approximately 96 percent of yellow and green cab drivers and 91 percent of FHV drivers were born in countries other than the United States. Before the COVID-19 pandemic, the number of licensed yellow cabs was steady between 2015 and 2019, limited by the number of total medallions available from the TLC. In contrast, the number of licensed green cabs decreased by 62 percent between 2015 and 2019 as the emerging FHV technology gained popularity and the number of licensed FHVs increased by over 50 percent between 2015 and 2019.[39]

The TLC provides data for both licensed vehicles and drivers (those that are currently in good standing with TLC's licensing division) and active vehicles and drivers (those that provided at least one trip in a given time period). The number of active vehicles differs from the number of licensed vehicles, because not every licensed vehicle is actively in use during a given time period. In 2018, during peak activity periods, as many as 12,610 active yellow cabs, 4,026 green cabs, and 90,284 active FHVs were providing trips in New York City.[40] Figure 6-7 illustrates the average number of active vehicles per month between 2015 and 2019 (distinguishing FHVs by traditional livery cars/black cars and high-volume FHVs available through ride hailing apps). As shown in the figure, there were reductions in the number of active livery cars, yellow cabs, and green cabs beginning in 2015 as the popularity of high-volume FHV ride hailing services grew. Between January 2016 and January 2019, the numbers of active yellow cabs, green cabs, and traditional livery/black cars decreased by 11.1 percent, 45.0 percent, and 55.4 percent, respectively.

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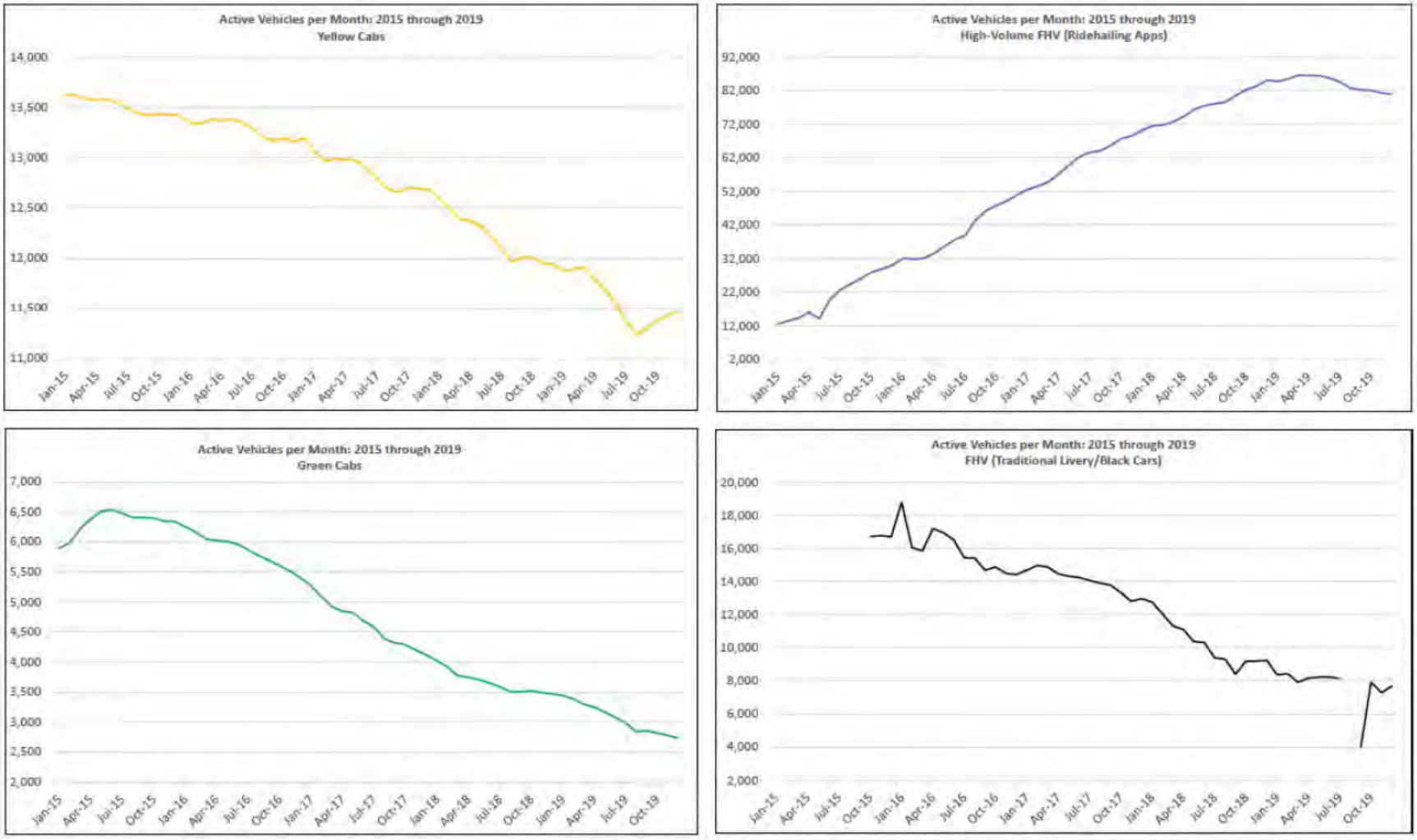
37 New York City TLC. 2020 Fact Book. https://www1.nyc.gov/assets/tlc/downloads/pdf/2020-tlc-factbook.pdf.

38 The New York City TLC's 2020 Fact Book defines paratransit vehicles as vehicles that provide pre-arranged service for medical-related purposes. Trips are usually to or from healthcare facilities and vehicles must be dispatched by a paratransit base. These do not include ADA-accessible yellow cabs.

39 New York City TLC. 2020 Fact Book and 2016 Fact Book. https://www1.nyc.gov/assets/tlc/downloads/pdf/2020-tlc-factbook.pdf.

40 The New York City TLC's 2018 Fact Book presents an annual number for licensed yellow cab, green cab, and FHVs, while data on the number of active vehicles is reported on a monthly basis. In the case of green cabs, the highest monthly statistic for active vehicles (4,026 in January 2018) was greater than the number of reported average annual licensed vehicles (3,579 vehicles in 2018); this is likely due to a downward trend in licensed green cab vehicles over 2018. For this reason, the numbers of licensed and active vehicles should not be used to estimate the percentage of licensed vehicles that are active. This level of data is not provided in the 2020 Fact Book.

Figure 6-7. Active Taxi and For-Hire Vehicles per Month (2015 through 2019)



Source: NYC Taxi & Limousine Commission's Monthly Indicators and FHV Base Aggregate reports. https://toddwschneider.com/dashboards/nyc-taxi-ridehailing-uber-lyft-data/.

A key contributor to rising congestion in the pre-COVID-19 pandemic period was the explosive growth of high-volume (application-based) FHVs. While the number of yellow taxicabs is capped at 13,587 vehicles, prior to 2018, there was no cap on the number of FHVs.[41] Between 2010 and 2019, companies such as Uber and Lyft dramatically expanded their operations, and the number of registered FHVs, licensed drivers, and trips doubled.[42] By fall 2019, there were more than 100,000 FHVs on the road, and taxis and FHVs made up 48 percent of all vehicles circulating in the Manhattan CBD.[43] The business model of the taxi and FHV industries requires drivers to cruise without passengers, increasing vehicle-miles traveled (VMT) in the Manhattan CBD. A large proportion of VMT for both taxi and high-volume FHVs is associated with cruising without passengers. In the fourth quarter of 2019 (prior to the COVID-19 pandemic), approximately 45 percent of yellow cabs' VMT within the Manhattan CBD were associated with cruising, while approximately 30 percent of high-volume FHVs' VMT within the Manhattan CBD were associated with cruising (including empty travel to a ride hail's pickup location).[44] Frequent double-parking by these vehicles further contributes to congestion.

TLC-licensed vehicles completed more than 1,000,000 trips per day on average by the end of 2019.[45] Most trips in yellow cabs originate in Manhattan (97 percent), while other TLC-based services distribute trips more evenly across the boroughs. In terms of distances traveled, the average yellow cab trip in 2018 was 3.7 miles and the average green cab trip was 2.8 miles, although more than one-half of all yellow cab and green cab trips were less than two miles.[46] The average fare for a yellow cab trip was $13.61 and the average fare for a green cab trip was $12.78.[47] Average distance and fare for FHV trips was not available. Drivers must use an E-ZPass when taking a toll bridge or tunnel. For a yellow or green cab, the discounted E-ZPass toll is added to the passenger fare at the end of the trip. For an FHV, the toll is part of the estimated trip cost included in the reservation for the FHV or the adjusted charge at the end of the trip. Passengers must also pay the tolls to and from a destination for the following trips: Westchester and Nassau Counties; trips over the Cross Bay Veterans and Marine Parkway-Gil Hodges Memorial Bridges; and Newark Airport.[48]

The pandemic resulted in dramatic reductions in demand for taxi and FHV services. Historically concentrated in the Manhattan CBD and airports, citywide demand for yellow taxi services fell to near zero in spring 2020 and only recovered to 25 percent of pre-pandemic levels by the fall peak of 2020 (**Figure 6-8**). High-volume FHV services, including Uber and Lyft, also dropped substantially but recovered more quickly,

41 New York City TLC.
42 New York City TLC 2020 TLC Factbook.
43 NYCDOT analysis.
44 *Ibid.*
45 In addition to taxis and FHVs, this includes trips made by 792 TLC-licensed commuter vans and 161 TLC-licensed paratransit vehicles.
46 According to the New York City TLC's 2018 Fact Book, 92.2 percent of yellow cab trips occur entirely within Manhattan, while 5.1 percent of yellow cab trips are to and from New York City airports. While yellow cab trips to airports constitute a small percentage of overall trips, the length of those trips contributes to the higher average yellow cab trip distance relative to the median trip distance. Unlike yellow cabs, green cabs may not pick up passengers from New York City airports unless trips are pre-arranged through a base. Therefore, most green cabs are used within the boroughs, excluding Staten Island.
47 This 2018 data does not account for the New York State Congestion Surcharge, which went into effect January 2019 ($2.75 for each for-hire vehicle transportation trip in a non-yellow cab or pool vehicle, $2.50 per trip by yellow cab, and $0.75 per pool trip; fares apply to all trips that begin, end, or pass through Manhattan south of 96th Street).
48 NYC Taxi & Limousine Commission. https://www1.nyc.gov/site/tlc/passengers/taxi-fare.page#.

with business at approximately two-thirds of pre-COVID-19 levels by the fall of 2020. Recovery of citywide trip levels continued in 2021, with fall trip levels at 46 percent and 83 percent for yellow taxi and high-volume FHV services, respectively, compared to the fall peak of 2019. In terms of citywide VMT, yellow taxis mileage accumulation in fall 2021 was approximately half of that in fall 2019, while high-volume FHV VMT mileage was three-quarters. Prior to the pandemic, taxi and FHV VMT in the Manhattan CBD represented approximately 15 percent to 20 percent of taxi and FHV VMT citywide. That fell to below 10 percent during the height of the pandemic and has since risen to approximately 15 percent. Yellow cab VMT in the Manhattan CBD represented about 35 percent to 40 percent of yellow cab VMT citywide pre-pandemic, falling to below 20 percent during the height of the pandemic, and has since risen to 30 percent. High-volume FHV VMT in the Manhattan CBD represented about 15 percent of high-volume VMT citywide pre-pandemic, falling to about 8 percent during the height of the pandemic, and has since risen to just under 15 percent.[49]

The number of TLC-licensed drivers actively performing trips reached a peak in October 2021 but was still just 69 percent of the number in October 2019 and was still recovering from significant loss of ridership due to the Omicron variant at the start of 2022. Many medallion owners stored their medallions with the NYC TLC rather than continue to pay fees for their use, and FHV drivers allowed their licenses to lapse in greater numbers. As of early 2022, the taxi industry remained dependent on the Manhattan core, with 75 percent of taxi trips starting or ending in the Manhattan CBD. By comparison, the FHV industry operated more widely in New York City, with 38 percent of high-volume FHV trips starting or ending in the Manhattan CBD[50].

Paratransit Vehicles

Paratransit is the term used for a "demand-response" service in which an eligible customer reserves a trip in advance to a destination within the service area covered by public buses and subways. The Americans with Disabilities Act (ADA) requires the provision of paratransit for individuals with disabilities who are unable to use accessible mass transit for some or all of their trips. In New York City, paratransit vehicles provide wheelchair-accessible rides through the Access-A-Ride program administered by MTA. The Access-A-Ride program provides shared-ride, door-to-door trips for New Yorkers utilizing various vehicle types. According to the TLC's 2020 Fact Book, in 2019 there were 161 paratransit vehicles licensed by the TLC.[51] The most commonly recognized blue and white vans are not licensed by the TLC, but TLC-licensed vehicles also provide trips for the Access-A-Ride program. As of May 2018, Access-A-Ride trips by TLC-licensed vehicles accounted for about one-half of all Access-A-Ride trips, and the share has been growing considerably since this option was first available in October 2016. As of 2019, the number of monthly Access-A-Ride trips in TLC-licensed vehicles exceeded 250,000.

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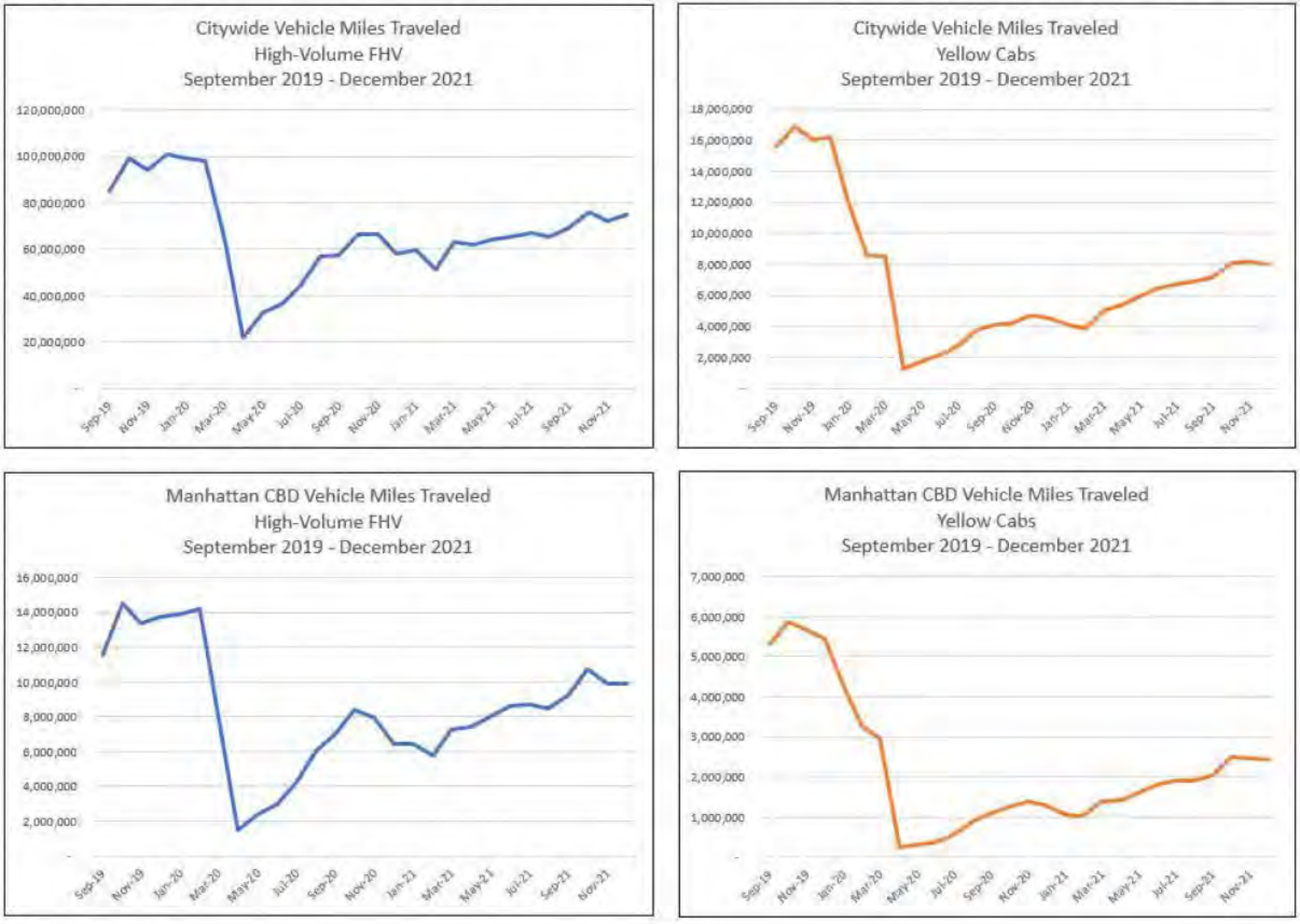
49 NYCDOT.

50 New York City TLC.

51 The New York City TLC's 2020 Fact Book defines paratransit vehicles as vehicles that provide pre-arranged service for medical-related purposes. Trips are usually to or from healthcare facilities and vehicles must be dispatched by a paratransit base. These do not include ADA-accessible yellow cabs.

Figure 6-8. High-Volume For-Hire Vehicle and Yellow Cab Vehicle Miles Traveled (September 2019 through December 2021)



Source: NYCDOT.

Buses

The following section describes the wide variety of bus types, organized by the type of service provided:

- **Public transit:** Public transit buses include New York City Transit/Manhattan and Bronx Surface Transit Operating Authority and MTA Bus Company buses that are subsidized services carrying primarily New York City residents and operated by a public agency; other non-subsidized franchise buses carrying primarily New York City residents operated by private companies; subsidized buses operated by a public agency servicing primarily New York State and New Jersey residents (e.g., NJ Transit Corporation, Bee Line); and subsidized private buses that carry primarily suburban (New York State and New Jersey) residents (e.g., Academy, Rockland Coach).
- **Public transportation (commuter vans):** New York's commuter vans—also known as shuttle buses, minibuses, dollar vans, or jitneys—carry approximately 120,000 passengers each day.[52] Most commuter vans provide service in areas that are less well-served by subway service or other public transportation options. Some commuter vans, such as the Chinatown-Flushing-Sunset Park commuter van, operate under privately owned Commuter Van Authorities licensed by the TLC to provide rides, though they do not operate on published schedules or routes. The commuter van drivers operate motor vehicles with seating capacity of 9 to 20 passengers. According to the TLC's 2020 Fact Book, in 2019 there were 792 commuter vans licensed by the TLC.[53] In addition, privately operated jitney buses provide transportation between New Jersey and Midtown Manhattan. The New Jersey jitneys provide a reliable, low-cost transit option to communities where conventional, direct public bus service is limited or unavailable. Jitneys that travel interstate are under the purview of the Federal government, are not licensed by the TLC, and pay tolls at the Port Authority of New York and New Jersey crossings.
- **Private use:** Private use buses include sightseeing buses operated by private companies to provide hop-on, hop-off tourist services within New York City as a for-profit enterprise, as well as charter buses operated by private companies to provide charter services as a for-profit enterprise.
- **Privately operated longer-haul public transportation**: These include buses operated by private companies (e.g., Greyhound) that provide long-distance, scheduled intercity services into and out of New York City as a for-profit enterprise, generally without public subsidy.
- **Access to education**: School buses provide subsidized bus service carrying students to both public and private schools located in the region.
- **Various other uses**: Other buses not identified above include those used by religious institutions, the New York City Department of Corrections, the NYPD, and TBTA.

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[52] King, D.A.; E. Goldwyn. September 2014. "Why do regulated jitney services often fail? Evidence from the New York City group ride vehicle project." *Transportation Policy 2014*, 35, 186 to 192.

[53] The New York City TLC's 2020 Fact Book defines paratransit vehicles as vehicles that provide pre-arranged service for medical-related purposes. Trips are usually to or from healthcare facilities and vehicles must be dispatched by a paratransit base. These do not include ADA-accessible yellow cabs.

Movement of Goods and Services, including Freight Transport

Every day, trucks and commercial vehicles deliver goods to millions of New York City residents and workers. Of the approximately 365 million tons of cargo that enter, leave, or pass through New York City each year, approximately 89 percent is carried by truck.[54] Trucks also deliver goods to homes or stores within New York City, commonly known as "last-mile" distribution. Trucks comprise a small but meaningful portion of the overall traffic stream in New York City, ranging from 8 percent to 12 percent of all traffic. Approximately 125,600 trucks cross into Manhattan per day, and approximately 73,600 trucks cross into Brooklyn each day from all points of access. Within Midtown Manhattan (in the Manhattan CBD), 80 percent of the commercial activity conducted by trucks occurs during daylight hours between 7:00 a.m. and 7:00 p.m. Congestion within Midtown impedes truck mobility during the day, with truck speeds dropping to 7 miles per hour, which is 50 percent slower than off-peak periods (between 7:00 p.m. and 7:00 a.m.).[55]

Though not always adhered to, truck traffic in New York City is required to use designated truck routes, which include local truck routes and through truck routes. Local truck routes are for use by trucks traveling to or from their origin and destination within a borough. Through truck routes consist of major urban arterials and highways and serve trucks along their journeys that have neither an origin nor destination within the borough.

Industry research on the trucking industry shows that in 2020, tolls were approximately 3 percent of motor carriers' average marginal cost per mile in the Northeast U.S. ($0.055 per mile, with a total average marginal cost of $1.835 per mile). The area covered by this research includes the 28-county regional study area for this EA, although toll costs for localized trip-making in and out of the Manhattan CBD could be higher than the regional average based on the density of tolled roadways and bridges. [56] From 2015 to 2020, the average marginal cost per mile of tolls across the trucking industry nationally increased by approximately 85 percent.[57] Many drivers and motor carriers plan their routes to avoid or minimize tolls, because tolls are typically considered a fixed cost that is not added directly to customer shipping invoices, and carriers or drivers absorb the cost of the toll expense.[58] Economic

Types of Costs

- **Marginal costs**: Costs associated with producing an additional unit of output (i.e., an additional mile of travel)
- **Fixed costs**: Costs that are constant and occur regularly (such as rent and salaries)
- **Variable costs**: Costs that change with the level of production, such as purchase of raw materials

54 New York City Department of Transportation. April 2019. *Improving the Efficiency of Truck Deliveries in NYC.* https://www1.nyc.gov/html/dot/downloads/pdf/truck-deliveries-ll189.pdf.

55 Ibid.

56 American Transportation Research Institute. *An Analysis of the Operational Costs of Trucking: 2021 Update.* November 2021. https://truckingresearch.org/wp-content/uploads/2021/11/ATRI-Operational-Cost-of-Trucking-2021-FINAL.pdf. Motor carrier marginal costs include vehicle-based costs (fuel, truck/trailer lease or purchase payments, repair and maintenance, truck insurance premiums, permits and licenses, tires, and tolls) and driver-based costs (driver wages and benefits). The marginal cost of tolls in the Northeast U.S. is heavily influenced by long-haul trucking costs and is not reflective of cost associated with "last-mile" distribution to and within the Manhattan CBD, for which tolls could comprise a higher percentage of cost depending upon the routes, time, and distance traveled.

57 Ibid. This statistic includes the cost of all tolling, accounting for both new tolls and toll increases.

58 Hooper, Alan, and Dan Murray. 2018. *An Analysis of the Operational Costs of Trucking: 2018 Update*. American Transportation Research Institute. https://truckingresearch.org/wp-content/uploads/2018/10/ATRI-Operational-Costs-of-Trucking-2018.pdf.

research on urban freight delivery in the region finds that it is a highly competitive market with delivery rates equal to marginal costs. Since toll costs are a fixed cost—as they do not depend on a singular unit of production (i.e., delivery to an individual receiver)—the toll cost cannot be passed along to most receivers. The exceptions are certain market segments—including carriers of stone/concrete, wood/lumber, food, electronics, and beverages—with market power such that they could pass along toll costs.[59] Despite these research findings, it is recognized that shippers will pass the cost along to receivers if the competitive market will support doing so, and therefore tolls costs may be passed along to receivers more broadly than suggested by this research. To the extent toll costs are passed along to receivers, those costs are diluted among the various receivers on a journey (within New York City, averaging 5.5 stops per journey[60]). Those receivers in turn pass incremental costs along to customers, with the cost further diluted across the inventory of shipped goods.

Examples of Truck Toll Costs

- **A 2-axle box truck shipping bananas from the Hunts Point Market to the Manhattan CBD**: The truck would pay a toll for the RFK Bridge crossing into Manhattan (ranging from $11.84 to $20.35) or use the Willis Avenue Bridge to avoid a toll.
- **A 3-axle truck shipping retail goods from a fulfillment center on Staten Island to Manhattan CBD**: The truck would pay a toll for the Verrazzano-Narrows Bridge (ranging from $19.40 to $33.51) to cross into Brooklyn, travel along the Belt Parkway (I-287), and then pay a toll to enter Manhattan through the Hugh L. Carey Tunnel (also ranging from $19.40 to $33.51) or use one of the untolled East River bridges to avoid a toll.

In the region, trucks must pay tolls on a number of facilities.[61] Toll rates vary, depending on which crossing is used, the direction of travel, time of day, the number of axles on the truck, and whether the toll is paid by E-ZPass, cash, or Tolls by Mail.[62] **Appendix 6B, "Economic Conditions: Existing Truck Toll Rates,"** presents ***[2022]*** truck toll rates at crossings in and near New York City. The cost of tolls associated with deliveries varies widely depending on the route, truck type, availability of E-ZPass, and the time and frequency of toll crossings. As shown in **Appendix 6B**, truck rates for individual Hudson River crossings near Manhattan range from $30 to $132, depending on the size of the vehicle, time of day, and availability of E-ZPass. Similarly, toll costs as a percentage of total delivery cost vary widely depending upon the routes, times, and distances traveled.[63] Delivery companies typically incorporate

59 Holguin-Veras, Jose, et al. September 2010. *Integrative Freight Demand Management in the New York City Metropolitan Area*. http://www.nyc.gov/html/dot/downloads/pdf/ohd-final-report.pdf.

60 Ibid.

61 Trucks must pay tolls at six bridges and two tunnels connecting the New York City boroughs (Bronx-Whitestone, Throgs Neck, Robert F. Kennedy, Verrazzano-Narrows, Cross Bay, and Marine Parkway Bridges; Hugh L. Carey and Queens-Midtown Tunnels); two tunnels and four bridges connecting New York City and New Jersey (Lincoln and Holland Tunnels, and George Washington, Bayonne, Goethals, and Outerbridge Crossing Bridges); and on several roadways and bridges outside New York City, including the New Jersey Turnpike (I-95), the Garden State Parkway south of Exit 105, the New York State Thruway (I-87), the Connecticut Turnpike (I-95), the Mario M. Cuomo Bridge (I-287), the Newburgh-Beacon Bridge (I-84), the Bear Mountain Bridge, the Mid-Hudson Bridge, and the Kingston-Rhinecliff Bridge.

62 Specific New York State Thruway toll rates can be identified using the toll calculator at https://wwwapps.thruway.ny.gov/tollcalculator/permit.aspx.
Port Authority of New York and New Jersey toll rates are at https://www.panynj.gov/bridges-tunnels/en/tolls.html.
TBTA toll rates are at https://new.mta.info/fares-and-tolls/bridges-and-tunnels/tolls-by-vehicles.

63 Pre-pandemic shipping data suggests that an average cost of a journey for a large truck between Maspeth, Queens and Manhattan (inclusive of tolls and driver and vehicle costs) was approximately $700 per journey, based on Chainalytics Inc. transportation service price benchmarking data purchased under the USDOT Freight Fluidity Program.

the toll costs into their overall delivery costs rather than add a special surcharge or line item for tolls.

6.3.3 Environmental Consequences

This section describes the effects of the No Action Alternative and CBD Tolling Alternative on forecasted economic conditions in the region by the 2023 analysis year, using results of the BPM. While the U.S. Census Bureau-based data sources are part of the development of the BPM, U.S. Census Bureau-based data is not directly comparable to the results of the BPM runs for the 2023 No Action Alternative so this chapter does not present a comparison of existing conditions to No Action Alternative conditions.[64] Like all transportation-related analyses, this section assesses incremental change between the 2023 No Action Alternative and the CBD Tolling Alternative and therefore largely relies on the results of the BPM.

6.3.3.1 No Action Alternative

Under the No Action Alternative, a vehicular tolling program to reduce traffic congestion in the Manhattan CBD would not be implemented. The movement of workers, goods and services, and consumers into, out of, and through the Manhattan CBD influence economic conditions at the regional level. The following sections address each of these influences for the No Action Alternative.

Movement of Workforce

The Project Sponsors conducted transportation modeling for the Project using the BPM originally developed by the New York Metropolitan Transportation Council, as described in Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling." The BPM uses census data and other economic forecasts to establish forecasts of travel characteristics. Therefore, the BPM results affirm the mode choice and travel patterns developed and described previously through census data but are not directly comparable to census data. The BPM baseline was used to model the incremental changes resulting from the CBD Tolling Alternative. The BPM results show that in the No Action Alternative, of the approximately 1.56 million workers who would commute into or within the Manhattan CBD, close to 80 percent (about 1.22 million workers) would use public transportation as their primary mode of transportation to work (Table 6-16). Approximately 17 percent of workers would commute into or within the Manhattan CBD by auto (including drive alone, carpool, or taxi/FHV). Under the No Action Alternative, nearly 5 percent of workers are estimated to commute by walking or biking.

[64] The BPM uses census data and other economic forecasts to establish forecasts of travel characteristics. Therefore, the BPM results affirm the mode choice and travel patterns developed and described previously through census data but are not directly comparable to census data.

Table 6-16. Regional Workforce Commuting To and Within the Manhattan CBD: No Action Alternative

GEOGRAPHIC AREA OF ORIGIN	COMMUTE BY PUBLIC TRANSPORTATION	COMMUTE BY AUTO (Including Taxi/FHV)	COMMUTE BY WALK/BIKE[1]	PERCENTAGE OF WORKERS COMMUTING BY AUTO
New York City	**765,424**	**173,374**	**69,671**	**17.2%**
Bronx County	78,107	19,411	0	19.9%
Kings County (Brooklyn)	231,152	50,789	498	18.0%
New York County (Manhattan)	232,162	39,672	68,856	11.6%
Inside Manhattan CBD	94,328	14,748	55,738	8.9%
Outside Manhattan CBD	137,834	24,924	13,118	14.2%
Queens County	202,032	58,095	317	22.3%
Richmond County (Staten Island)	21,971	5,407	0	19.7%
Long Island Counties[2]	**112,408**	**16,394**	**0**	**12.7%**
New York Counties North of New York City[3]	**74,409**	**27,336**	**0**	**26.9%**
New Jersey Counties[4]	**222,044**	**42,368**	**0**	**16.0%**
Connecticut Counties[5]	**46,932**	**10,707**	**0**	**18.6%**
TOTAL	**1,221,217**	**270,179**	**69,671**	**17.3%**

Source: BPM, WSP 2021.

1 When the BPM was developed in 2005, insufficient data was available to reliably estimate bike journeys; based on 2012–2016 CTPP data, the BPM results tend to underreport walk/bike journeys.

2. Long Island counties include Nassau and Suffolk.

3. New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4. New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5. Connecticut counties include Fairfield and New Haven.

New York City's five boroughs would continue to provide the largest absolute numbers of commuters into the Manhattan CBD (1.01 million workers, including those residing within the Manhattan CBD), with the largest percentage of those commuters traveling from Manhattan and Brooklyn. The workforce within New York City would have a lower rate of auto commuting to the Manhattan CBD (about 17 percent) as compared to New York counties north of New York City (27 percent) and Connecticut counties (19 percent), a slightly higher auto-commuting rate from New Jersey (16 percent), and a higher rate than Long Island (13 percent). The lowest rate of auto commuting would be from Manhattan CBD residents who work within the Manhattan CBD (9 percent), with over one-third of these workers walking or biking to work.

Table 6-17 presents BPM projections for the primary mode of transportation of regional workforce participants who commute from within the Manhattan CBD to regional destinations outside the Manhattan CBD. In the No Action Alternative, of the projected 37,457 workers who commute from within to outside of the Manhattan CBD, approximately 64 percent (23,881 workers) would use public transportation as their primary mode of transportation to work. Approximately 33 percent of workers would commute from the Manhattan CBD to non-CBD destinations by auto (including taxi/FHV), and about 3 percent of workers would commute by other modes (e.g., walk or bicycle).

Table 6-17. Regional Workforce Commuting from Within the Manhattan CBD to Regional Destinations Outside the Manhattan CBD: No Action Alternative

GEOGRAPHIC AREA OF DESTINATION	COMMUTE BY PUBLIC TRANSPORTATION	COMMUTE BY AUTO (Including Taxi/FHV)	COMMUTE BY WALK/BIKE[1]	PERCENTAGE OF WORKERS COMMUTING BY AUTO
New York City	**18,991**	**3,010**	**1,041**	**13.1%**
Bronx County	693	316	0	31.3%
Kings County (Brooklyn)	3,820	1,161	388	21.6%
New York County (Manhattan) outside Manhattan CBD	13,563	1,238	638	8.0%
Queens County	905	285	15	23.7%
Richmond County (Staten Island)	10	10	0	50.0%
Long Island Counties[2]	**1,057**	**1,694**	**0**	**61.6%**
New York Counties North of New York City[3]	**134**	**431**	**0**	**76.3%**
New Jersey Counties[4]	**3,054**	**6,702**	**0**	**68.7%**
Connecticut Counties[5]	**645**	**698**	**0**	**52.0%**
TOTAL	**23,881**	**12,535**	**1,041**	**33.5%**

Source: BPM, WSP 2021.

1 When the BPM was developed in 2005 there was insufficient data available to reliably estimate bike journeys; based on 2012–2016 CTPP data the BPM results tend to underreport walk/bike journeys.

2 Long Island counties include Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

5 Connecticut counties include Fairfield and New Haven.

Of workers who live in, but work outside, the Manhattan CBD approximately 41 percent (an estimated 15,439 workers) would work at locations elsewhere in Manhattan; of those commuters, approximately 8 percent (1,238 workers) would commute to their jobs by personal auto or taxi/FHV. The next-largest destinations for residents of the Manhattan CBD who work elsewhere would be New Jersey counties (9,756 workers), followed by Brooklyn (5,369 workers) and Long Island (2,751 workers). Counties north of New York City would see the largest percentage of Manhattan CBD residents who work elsewhere and use personal auto or taxi/FHV as the primary means of travel, at approximately 76 percent (431 of 565 workers), followed by New Jersey counties, at 69 percent (6,702 of 9,756 workers).

Regional Non-Work-Related Journeys To, From, and Within the Manhattan CBD

Table 6-18 presents the projected numbers of regional non-work journeys to and within the Manhattan CBD under the No Action Alternative. These include journeys for activities such as health care visits, retail and grocery purchases, dining, and entertainment. Overall, approximately 14 percent of such journeys would be made by auto, which would be a lower rate than work journeys to the Manhattan CBD (17 percent) and substantially less in terms of the overall volume (117,950 non-work journeys by auto, as compared to 270,179 drive journeys for work). The highest rates of auto-based, non-work journeys would originate in New York counties north of New York City (approximately 48 percent). Connecticut counties and Long Island also have relatively high rates of auto-based journeys (approximately 42 and 38 percent, respectively), followed by New Jersey counties with 22 percent of non-work journeys by auto. However, the auto-based, non-work journeys to the Manhattan CBD originating from outside of New York City would

represent only about 5 percent of the total auto-based journeys to the Manhattan CBD from the regional study area; New York City residents would contribute the remaining 95 percent. Approximately 86 percent of the region's non-work journeys made by public transportation into and within the Manhattan CBD would originate within New York City.

Table 6-18. Daily Regional Non-Work-Related Journeys To and Within the Manhattan CBD: No Action Alternative

GEOGRAPHIC AREA OF ORIGIN	JOURNEYS BY ALL MODES	JOURNEYS BY AUTO (Including Taxi/FHV)	PERCENTAGE OF JOURNEYS BY AUTO
New York City	**796,263**	**97,212**	**12.2%**
Bronx County	41,511	9,427	22.7%
Kings County (Brooklyn)	80,405	17,327	21.5%
New York County (Manhattan)	601,900	53,265	8.8%
Inside Manhattan CBD[1]	513,511	35,250	6.9%
Outside Manhattan CBD	88,389	18,015	20.4%
Queens County	61,828	14,972	24.2%
Richmond County (Staten Island)	10,619	2,221	20.9%
Long Island Counties[2]	**16,566**	**6,300**	**38.0%**
New York Counties North of New York City[3]	**7,640**	**3,680**	**48.2%**
New Jersey Counties[4]	**46,807**	**10,121**	**21.6%**
Connecticut Counties[5]	**1,514**	**637**	**42.1%**
TOTAL	**868,790**	**117,950**	**13.6%**

Source: BPM, WSP 2021.

1 Journeys originating in the Manhattan CBD are internal journeys within the Manhattan CBD.

2 Long Island counties includes Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 Connecticut counties include Fairfield and New Haven.

5 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

Table 6-19 presents the projected numbers of non-work journeys originating within the Manhattan CBD and destined for non-CBD locations. Overall, under the No Action Alternative approximately 11 percent of such journeys would be made by auto, which would be a lower rate than work journeys from the Manhattan CBD (34 percent) but a substantially higher overall volume (70,630 non-work journeys by auto, as compared to 12,535 drive journeys for work). The highest rates of auto-based, non-work journeys would be destined for Long Island (95 percent) and Connecticut counties (94 percent), followed by New York counties north of New York City with 89 percent of all non-work journeys to those counties from the Manhattan CBD arriving by auto. However, the auto-based, non-work journeys from the Manhattan CBD destined for regional locations outside New York City would represent about 14 percent of the total auto-based journeys from the Manhattan CBD; New York City destinations would contribute the remaining 86 percent. With respect to public transportation, about 99 percent of those journeys would be destined for locations within New York City.

Table 6-19. Daily Non-Work-Related Journeys From the Manhattan CBD: No Action Alternative

GEOGRAPHIC AREA OF DESTINATION	JOURNEYS BY PUBLIC TRANSPORTATION	JOURNEYS BY AUTO (Including Taxi/FHV)	JOURNEYS BY WALK/BIKE[1]	PERCENTAGE OF JOURNEYS BY AUTO
New York City	**182,684**	**60,848**	**411,230**	**9.3%**
Bronx County	2,903	5,262	0	64.4%
Kings County (Brooklyn)	7,663	8,620	4,203	42.1%
New York County (Manhattan)	169,103	43,472	406,551	7.0%
Inside Manhattan CBD	126,589	35,250	383,588	6.5%
Outside Manhattan CBD	42,514	8,222	22,963	11.2%
Queens County	3,001	3,481	476	50.0%
Richmond County (Staten Island)	14	13	0	48.1%
Long Island Counties[2]	**241**	**4,194**	**0**	**94.6%**
New York Counties North of New York City[3]	**281**	**2,245**	**0**	**88.9%**
New Jersey Counties[4]	**976**	**3,231**	**0**	**76.8%**
Connecticut Counties[5]	**7**	**112**	**0**	**94.1%**
TOTAL	**184,189**	**70,630**	**411,230**	**10.6%**

Source: BPM, WSP 2021.

1 When the BPM was developed in 2005 there was insufficient data available to reliably estimate bike journeys; based on 2012–2016 CTPP data the BPM results tend to underreport walk/bike journeys.

2 Long Island counties includes Nassau and Suffolk.

3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

4 Connecticut counties include Fairfield and New Haven.

5 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

Taxi and For-Hire Vehicle Industry

Table 6-20 presents projections of daily VMT by taxi/FHV within the region under the No Action Alternative.[65] In total, taxis/FHVs would travel approximately 4.3 million VMT on a daily basis. Over one-half (approximately 58 percent) of all taxi/FHV VMT would occur within New York City, with nearly one-half (approximately 43 percent) of those VMT occurring within Queens, and approximately 29 percent of New York City VMT occurring within Manhattan. Outside New York City, New Jersey counties would have the highest VMT for the region (approximately 1.2 million VMT daily).

65 Taxis and FHVs are a single mode in the BPM and therefore cannot be presented separately.

Table 6-20. Daily Vehicle-Miles Traveled for Taxis/For-Hire Vehicles in the Regional Study Area: No Action Alternative

GEOGRAPHIC AREA	VEHICLE-MILES TRAVELED[1]
New York City	**2,503,176**
Bronx County	272,450
Kings County (Brooklyn)	373,255
New York County (Manhattan)	715,505
Inside Manhattan CBD	323,998
Outside Manhattan CBD	391,507
Queens County	1,085,040
Richmond County (Staten Island)	56,926
Long Island Counties[2]	**291,624**
New York Counties North of New York City[3]	**222,684**
New Jersey Counties[4]	**1,181,690**
Connecticut Counties[5]	**116,356**
TOTAL	**4,315,530**

Source: BPM, WSP 2021.
Note: Numbers may not total due to rounding.
1 Projections include vehicle-miles-traveled only during fares and do not include cruising without passenger(s).
2 Long Island counties includes Nassau and Suffolk.
3 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.
4 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.
5 Connecticut counties include Fairfield and New Haven.

Movement of Goods and Services, Including Freight Transport

Table 6-21 presents the projected daily vehicle trips within and to the Manhattan CBD in the No Action Alternative for different types of commercial vehicles (trucks). It is important to note that total number of daily trips for vehicle types associated with the movement of goods and services should not be confused with a total number of individual vehicles. Rather, it represents vehicles that will make a series or chain of trips within the Manhattan CBD boundary to fulfill deliveries or other services. Each trip identified in **Table 6-21** represents a modeled estimate of each individual leg of the multiple-stop trip. The 18,965 medium truck trips and 6,043 heavy truck trips to the Manhattan CBD shown in the table also include multiple crossings to and from the Manhattan CBD over the course of a day. An example would be the U.S. Postal Service, where delivery vehicles leave the main distribution center and make a series of stops (each one considered an individual trip in **Table 6-21**) throughout the day.

Table 6-21. Daily Vehicle Trips Within and To the Manhattan CBD by Type: No Action Alternative

VEHICLE TYPE	DAILY VEHICLE TRIPS WITHIN MANHATTAN CBD	DAILY VEHICLE TRIPS CROSSING INTO MANHATTAN CBD
Commercial Van	122,098	23,203
Medium Truck	63,079	18,965
Heavy Truck	39,631	6,043
TOTAL	**224,808**	**48,211**

Source: BPM, WSP 2021.
Notes: Numbers may not total due to rounding.
Daily vehicle trips account for multiple stops by the same vehicle. Trips do not include through truck trips (i.e., truck trips passing through the Manhattan CBD without a stop in the Manhattan CBD.

6.3.3.2 CBD Tolling Alternative

This section describes the potential effects of the CBD Tolling Alternative on regional economic conditions, when compared with the No Action Alternative, beginning with a description of the potential regional economic benefits of the CBD Tolling Alternative. It then considers whether the projected changes in the flows of workers, goods and services, or consumers could alter regional market conditions in a manner that could jeopardize the viability of specific industries.

Potential Economic Benefits

A study conducted for Partnership for New York City found that traffic congestion in the New York metropolitan area has a $20 billion annual cost, including more than $9 billion in travel-time costs and nearly $6 billion in industry revenue losses. ***[The study estimates the cost per commuter from congestion is nearly $1,900 annually for Manhattan Workers and $767 per worker for the New York City metropolitan region.[66] The Partnership for New York City's original 2006 research found that the level of traffic in New York City and much of the metropolitan region has crossed the dividing line that separates economically efficient traffic flow from destructive, excess congestion. As a result, virtually every business and industry sector in all five boroughs and across the metropolitan region is suffering losses because of congestion.[67]***

Congestion pricing benefits drivers and businesses by reducing delays and stress, by increasing the predictability of trip times, and by allowing for more deliveries per hour for businesses.[68] More reliable and productive workforce as well as improved ability to schedule and complete deliveries would have beneficial impacts on businesses in the Manhattan CBD.] Through congestion relief, the CBD Tolling Alternative would provide an economic benefit to the Manhattan CBD, and thus to the region and nation as a whole. As discussed earlier, the Manhattan CBD is a critical economic core of the region and a center of national and global economic activity. As the largest business district in the nation as well as the most visited city in the

66 The study defined the New York metropolitan area as including New York City, Westchester, Putnam, and Rockland Counties, and northern New Jersey. https://pfnyc.org/wp-content/uploads/2020/01/2018-01-Congestion-Pricing.pdf.

67 *[Partnership For New York City. Growth or Gridlock? The Economic Case for Traffic Relief and Transit Improvement for a Greater New York, December 2006. https://www.pfnyc.org/reports/GrowthGridlock_4pg.pdf.]*

68 *[U.S. Department of Transportation Federal Highway Administration, October 2008. Congestion Pricing: A Primer Overview. https://ops.fhwa.dot.gov/publications/fhwahop08039/fhwahop08039.pdf.]*

United States for business, cultural, and tourism travel, its transportation network is essential to supporting the high density that underpins New York City.

More specifically, transportation users in the region would benefit economically from the CBD Tolling Alternative through travel-time savings, improved or stabilized travel-time reliability, reduced vehicle operating costs, and improved safety that are described in **Chapter 5A, "Population Characteristics and Community Cohesion."** These changes would also positively affect productivity as described below:

- **Travel-Time Savings:** Travel-time savings associated with both work and non-work journeys are an economic benefit because they increase a person's productivity and overall utility by reducing time spent on less productive activities (i.e., traveling to a destination). Reduced congestion would facilitate the more efficient and cost-effective distribution of goods and services by truck and other deliveries in the Manhattan CBD. Part of the economic benefit realized by travel-time savings benefits would be offset by the increased transportation cost for those journeys under the CBD Tolling Alternative in the form of a toll. These benefits would occur in all tolling scenarios.
- **Vehicle Operating Cost Savings:** The CBD Tolling Alternative would decrease regional VMT relative to the No Action Alternative, which could lead to vehicle operating cost savings for drivers and businesses, which is an economic benefit.
- **Reliability Benefits:** When transportation systems are improved in terms of capacity or reliability, they can have an economic benefit such as increased opportunities and higher quality of life. Improving travel-time reliability also reduces logistics and scheduling costs beyond just the travel-time savings. Reliability of travel time refers to the level of travel-time uncertainty. When travel times are unpredictable, travelers typically allow more time for their journey to account for possible delays. By reducing congestion in the Manhattan CBD, the CBD Tolling

[London Congestion Pricing

- ***Although the congestion charge in London was initially criticized by different stakeholders and interest groups for its negative impact on economy, a survey on a business group which accounted for 22 percent of London's GDP found that the majority (over 90 percent) of the members felt either no impact or positive impact on their business, and only 9 percent reported negative impact on their business.***
  (Litman, T. 2006. London congestion pricing. Implications for Other Cities found at: https://www.vtpi.org/london.pdf)
- ***A 2008 study found the level of acceptability toward London congestion charge increased from about 40 percent before the charge to more than 50 percent eight months after its introduction. (Zheng, Zuduo, Liu, Zhiyuan, Liu, Chuanli, Shiwakoti, Nirajan, 2014. Understanding public response to a congestion charge: A random-effects ordered logit approach. Transportation Research Part A. In press. Found at: http://www.connectedandautonomoustransport.com/uploads/2/5/2/6/25268286/public_acceptance_to_a_congestion_charge.pdf).***
- ***Separate analyses indicated pricing in London has neutral regional economic impacts, though annual surveys suggest businesses in the priced zone have outperformed those outside. In Singapore, surveys suggested that the pricing did not change business conditions or location patterns. Overall, the business community responded positively to the program.***
  (K.T. Analytics, Inc. August 2008. Lessons Learned from International Experience in Congestion Pricing, Final Report found at: https://ops.fhwa.dot.gov/publications/fhwahop08047/intl_cplessons.pdf)]

Alternative would reduce the current uncertainty associated with travel in the Manhattan CBD and potentially allow travelers to reduce the buffer time set aside for their journeys.

[Growing congestion and unreliability threatens truck transportation productivity and ultimately the ability of sellers to deliver products to market. Additionally, when deliveries cannot be relied on to arrive on time, businesses must keep extra "buffer stock" inventory on hand, which can be expensive. Pricing of the nation's major thoroughfares to guarantee free flow of traffic will ensure that reliability is restored to the transportation system, keeping business and transportation costs low. Lower costs will increase the competitiveness of U.S. businesses in international markets and boost the U.S. economy.[69]]

- Safety Benefits: Enhanced safety reduces medical costs and time spent injured/healing, both of which improve economic productivity.
- Accessibility Benefits: From an economic perspective, accessibility refers to the number of opportunities available for a given cost, either in terms of time or money. As the cost for movement between any two places changes, either in terms of time or money, accessibility changes. Accessibility can also be understood as the attractiveness of a place of origin (how easy it is to get from there to all other destinations) or of a destination (how easy it is to get to there from all other origins and destinations). For residents, accessibility includes access to employment, education, health care, and recreation. For businesses, it refers to access to labor, clients, support services, vendors, business partners, and deliveries. The CBD Tolling Alternative would improve accessibility for users throughout the region by decreasing congestion. In the long term, improved access to larger consumer markets and larger labor pools as well as more efficient access to resources could positively affect productivity, provide economies of scale, and lead to new economic growth. For some travelers, the introduction of a toll would decrease accessibility by disincentivizing an auto-based mode choice but given the small proportion of commuters who drive to work and the wide range of travel options other than driving available to the great majority of travelers, the effect of the CBD Tolling Alternative overall on accessibility would be positive.

Potential Adverse Economic Effects

At a regional level, the CBD Tolling Alternative would not substantively alter one or more of the underlying forces that shape real estate market conditions, and therefore would not be likely to result in the involuntary displacement of residents, businesses, or employees. (Section 6.4 addresses the potential for indirect, or secondary, displacement at the neighborhood level.) While there would be potential social, economic, and environmental benefits from the CBD Tolling Alternative—some of which are discussed in the previous section—these factors would not be substantial enough to markedly influence residential or commercial rents within or outside of the Manhattan CBD. The study area and the Manhattan CBD have well-established residential and commercial markets that are heavily influenced by locational attributes (e.g., close proximity to job centers, cultural institutions and amenities, public transportation) that far

[69] *[U.S. Department of Transportation Federal Highway Administration, October 2008. Congestion Pricing: A Primer Overview. https://ops.fhwa.dot.gov/publications/fhwahop08039/fhwahop08039.pdf.]*

outweigh the potential influence of quality-of-life benefits generated by the CBD Tolling Alternative. This section therefore focuses on potential changes in workforce and the operations of certain industries.

Movement of Workers

With the CBD Tolling Alternative, there would be an incremental cost to workers associated with commuting by auto if they enter or remain in the Manhattan CBD.[70] For these directly affected subsets of workers who would commute by auto—in total, approximately 19 percent of all workers commuting to or from the Manhattan CBD—the CBD Tolling Alternative would require one of the following decisions:

- **Continue to commute to work by auto and incur the toll cost.** The frequency and feasibility of this option for individuals would depend on several factors, such as the cost of the toll, their wages and salary, and the availability of non-vehicular commute options near their places of work and residence. As shown in **Table 6-22**, the BPM projects that there would be decreases in auto-commuting rates into, out of, and within the Manhattan CBD under the various tolling scenarios as compared to the No Action Alternative, but that many commuters would continue to travel by auto. The aggregate change in share of auto commuters into and within the Manhattan CBD would range from a decrease of 0.8 percentage points under Tolling Scenarios A and B (from 17.3 percent to 16.5 percent) to a 2.3 percentage point decrease under Tolling Scenario E (from 17.3 percent to 15.0 percent). Similarly, the aggregate change in share of auto commuters from within the Manhattan CBD to regional workplace locations outside the Manhattan CBD would range from a decrease of 0.8 percentage points under Tolling Scenario B (from 33.5 percent to 32.7 percent) to a 2.0 percentage point decrease under Tolling Scenario D (from 33.5 percent to 31.5 percent).

  Table 6-23 presents absolute differences in the numbers and the percentage changes of journeys by auto. The absolute change in auto commuters into and within the Manhattan CBD would range from a decrease of 11,790 journeys under Scenario B to a decrease of 27,221 journeys under Tolling Scenario E.

[70] BPM traffic modeling considers a toll only for entering a zone, although legislation allows for tolling those remaining in the zone. As detailed in **Chapter 2, "Project Alternatives,"** at this time, the Project Sponsors consider vehicles that remain in the Manhattan CBD to be those that were not detected entering but must have been remaining in the Manhattan CBD since they were detected leaving.

Table 6-22. Percentage of Worker Journeys by Auto To, Within, and From the Manhattan CBD

GEOGRAPHY	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
Workers Commuting by Auto **To and Within** the Manhattan CBD	17.3%	16.5%	16.6%	16.2%	15.8%	15.0%	15.8%	16.5%
Workers Commuting by Auto **From** the Manhattan CBD	33.5%	32.4%	32.7%	32.1%	31.5%	31.7%	32.2%	32.3%

Source: BPM, WSP 2021.

Table 6-23. Change in Numbers of Worker Journeys by Auto To, Within, and From the Manhattan CBD

GEOGRAPHY	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
Workers Commuting by Auto **To and Within** the Manhattan CBD	270,179	-12,552 (-4.6%)	-11,790 (-4.4%)	-17,271 (-6.4%)	-23,877 (-8.8%)	-27,221 (-10.1%)	-24,230 (-9.0%)	-13,264 (-4.9%)
Workers Commuting by Auto **From** the Manhattan CBD	12,535	-482 (-3.8%)	-328 (-2.6%)	-661 (-5.3%)	-961 (-7.7%)	-916 (-7.3%)	-621 (-5.0%)	-550 (-4.4%)

Source: BPM, WSP 2021.

- **Switch modes of commute to non-vehicular option(s) to avoid the toll.** The feasibility and frequency of selecting this option would depend in part on the availability of non-vehicular commute options near the commuter's place of work and/or residence. Some commuters could choose to continue to drive toward the Manhattan CBD, but park outside of the Manhattan CBD and walk or transition to public transportation for final leg of their commute to avoid the toll. The likelihood of commuters choosing to do this would depend on the availability and cost of parking near transit stations outside the Manhattan CBD coupled with the cost of that transit journey, in comparison to the cost of the new toll as well as the total time duration of such a trip. The BPM results indicate that a small number of commuters would choose this option (for more information, see **Subchapter 4D, "Transportation: Parking"**). As shown in **Table 6-24 and Table 6-25**, with the CBD Tolling Alternative, there would be increases in the share of commuters using public transportation and walking/biking to, from, and within the Manhattan CBD, except for Manhattan CBD residents who work in the Manhattan CBD, who would generally continue to use public transportation, walk, and bike at the same rate as in the No Action Alternative. Overall, under Tolling Scenario E there would be the highest percentage of workers electing to commute by public transportation (82.7 percent, compared to 80.7 percent in the No Action Alternative). Under Tolling Scenario B, there would be a slight decrease in public transportation usage from this subset of Manhattan CBD commuters, likely due to the relatively inelastic price sensitivity of

auto commuters combined with the scenario's easing congestion, which in turn would marginally increase the attractiveness of commuting by auto (e.g., taxi/FHV) within the Manhattan CBD. This phenomenon would be counterbalanced by reduced congestion in the Manhattan CBD, making some bus routes run faster and more reliable.

- **Telecommute, or telecommute more often, to eliminate or reduce the frequency of incurring the toll.** Though not a viable option for all types of work, telecommuting is growing (and will continue to grow with or without CBD Tolling Alternative) based on continual improvements in technologies, restructuring of office space, and other factors, including but not limited to the influence of the COVID-19 pandemic, cost savings, and benefit and lifestyle offerings. The degree to which the CBD Tolling Alternative would also incentivize this behavior would depend on the specific cost increase for a given worker, which would be based not only on the cost of the toll but also any potential crossing credits and/or exemptions, as well as the employee's specific work environment and workplace policies.
- **Commute earlier or later to avoid incurring the toll.** Though not a viable option for many workers, those who can adjust their work hours could elect to commute during off-peak and/or overnight hours to reduce the cost of a toll associated with auto commuting. Tolling Scenarios E and F would have the greatest potential to incentivize this behavior because they would have the largest cost differential between peak and non-peak toll rates.
- **Seek new employment opportunities (or other workplace locations with the same employer) at location(s) that would not involve incurring the toll.** Some commuters to the Manhattan CBD might decide to relocate or switch jobs to locations outside the Manhattan CBD. The CBD Tolling Alternative could also result in new workplace decision-making for those who would not incur a toll based on their existing commute; members of the labor force could find new job opportunities because other toll-affected workers could elect to vacate their positions to avoid tolling. In some instances, there could be a societal cost associated with decision-making that is a benefit to individuals. For example, a member of the labor force currently residing in the Bronx and who commutes by subway into the Manhattan CBD could instead choose to commute by auto to a job closer to home in the Bronx or upper Manhattan. Overall, Tolling Scenarios E and F (with the highest toll rates) would be the tolling scenarios most likely to incentivize this behavior, while Tolling Scenario A (with the lowest toll rates) would be the least likely tolling scenario to incentivize this behavior.

  The feasibility and frequency of such options would largely depend on the availability of similar employment opportunities at locations that would avoid the toll and that otherwise would be a more desirable commuting option. Since the BPM is a regional transportation model used to predict changes in mode and route that would result from modifications to the transportation system—using adopted regional population, labor force, and employment forecasts—it does not (and cannot) predict changes to the numbers of residents, workers, or jobs in the region. The BPM projections are predictive of changes in mode choice, but because they must hold the number of jobs steady, the projections assume that any vacated positions within the region would be filled by other labor force participants. This analysis therefore does not rely on BPM results for determining potential effects on labor supply within the region; rather, it considers the potential industry effects by conservatively assuming that positions currently occupied by auto commuters could be vacated and potentially not be filled by other labor force participants.

Table 6-24. Percentage of Worker Journeys by Non-Auto To and From the Manhattan CBD

GEOGRAPHY AND MODE	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
Workers Commuting from Outside the Manhattan CBD to the Manhattan CBD								
Percentage by Transit	80.7%	81.6%	81.7%	81.9%	82.4%	82.7%	82.5%	81.8%
Percentage by Walk/Bike	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Workers Commuting from Within the Manhattan CBD to the Manhattan CBD								
Percentage by Transit	57.2%	57.3%	56.5%	57.2%	57.4%	57.2%	57.2%	56.6%
Percentage by Walk/Bike	33.8%	33.8%	33.9%	33.7%	33.6%	33.7%	33.7%	33.7%
Workers Commuting from Within the Manhattan CBD to Outside the Manhattan CBD								
Percentage by Transit	63.8%	64.7%	64.4%	65.0%	65.6%	65.4%	65.0%	65.0%
Percentage by Walk/Bike	2.8%	2.9%	2.9%	2.9%	2.9%	2.9%	2.8%	2.8%

Source: BPM, WSP 2021.
Note: When the BPM was developed in 2005, there was insufficient data available to reliably estimate bike journeys; based on 2012–2016 CTPP data the BPM results tend to underreport walk/bike journeys. In addition, the BPM is best suited for predicting travel by automobile and transit; the internal calculations in the model related to routes available to automobiles result in the prediction of negligible reductions in the number of walk/bike journeys in some tolling scenarios.

Table 6-25. Change in Number of Worker Journeys by Non-Auto To and From the Manhattan CBD

GEOGRAPHY AND MODE	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
Workers Commuting from Outside the Manhattan CBD to the Manhattan CBD								
Number by Transit	1,126,889	+12,280 (+1.1%)	+13,082 (+1.2%)	+16,877 (+1.5%)	+23,482 (+2.1%)	+26,717 (+2.4%)	+24,083 (+2.1%)	+14,351 (+1.3%)
Number by Walk/Bike	13,933	-28 (-0.2%)	-331 (-2.4%)	+67 (0.5%)	-158 (-1.1%)	-67 (-0.5%)	-133 (-1.0%)	-102 (-0.7%)
Workers Commuting from Within the Manhattan CBD to the Manhattan CBD								
Number by Transit	94,328	+263 (+0.3%)	-1,157 (-1.2%)	+308 (+0.3%)	+595 (+0.6%)	+485 (+0.5%)	+268 (+0.3%)	-851 (-0.9%)
Number by Walk/Bike	55,738	0 (0.0%)	+144 (+0.3%)	+45 (+0.1%)	-69 (-0.1%)	+100 (+0.2%)	+4 (0.0%)	-184 (-0.3%)
Workers Commuting from Within the Manhattan CBD to Outside the Manhattan CBD								
Number by Transit	23,881	+181 (+0.8%)	+187 (+0.8%)	+147 (+0.6%)	+271 (+1.1%)	+56 (+0.2%)	+164 (+0.7%)	+280 (+1.2%)
Number by Walk/Bike	1,041	+19 (+1.8%)	+61 (+5.9%)	+24 (+2.3%)	+24 (+2.3%)	+25 (+2.4%)	-18 (-1.7%)	-9 (-0.9%)

Source: BPM, WSP 2021.
Note: When the BPM was developed in 2005, there was insufficient data available to reliably estimate bike journeys; based on 2012–2016 CTPP data the BPM results tend to underreport walk/bike journeys. In addition, the BPM is best suited for predicting travel by automobile and transit; the internal calculations in the model related to routes available to automobiles result in the prediction of negligible reductions in the number of walk/bike journeys in some tolling scenarios.

- **Relocate their place of residence to a location within the Manhattan CBD.** Existing or new workers with jobs in the Manhattan CBD could elect to move to a residence within the Manhattan CBD and walk/bike to work or commute by transit to avoid a toll associated with auto commuting. Tolling Scenarios E and F would have the greatest potential to incentivize this behavior because they would have the highest toll rates; Tolling Scenario E would also have the greatest potential to reduce congestion and improve other quality-of-life factors within the Manhattan CBD. However, the CBD Tolling Alternative would have a marginal influence on residential location decision-making because potential cost savings associated with eliminating a toll would be far outweighed by other cost-of-living and quality-of-life factors. Given the relatively high rents and home prices within the Manhattan CBD compared with other locations within the study area, those considering a move because of the cost of tolling would be more likely to locate in areas outside the Manhattan CBD near transit to avoid the toll. In addition, those moving into the Manhattan CBD with a personal auto would incur new tolling costs for non-commute trips, thereby diminishing the cost savings.
- **Relocate their place of residence to a location closer to transit outside the Manhattan CBD.** Existing or new workers with jobs in the Manhattan CBD could elect to move to a residence closer to transit and park-and-ride commute to avoid a toll associated with auto commuting. Tolling Scenarios E and F would have the greatest potential to incentivize this behavior because they would have the greatest cost differential between peak and non-peak toll fees.

  Pass-through commuters who drive through the Manhattan CBD would either continue to drive through and pay the Manhattan CBD toll or select an alternative route that avoids the toll. The frequency and feasibility of this option is dependent on the length of time associated with re-routing as well as the continuous improvement of live traffic and wayfinding information to avoid the toll.

  As noted above, the BPM projections assume that in the aggregate, there would be no change in the total employment or overall workforce commutes into and within the region as a result of the CBD Tolling Alternative (Table 6-26). However, it is possible that jobs in certain industries could be affected at a greater rate than suggested by the net results of the BPM if those industries and occupations had a higher percentage of workers who commute by auto, or if certain locations within the Manhattan CBD were highly dependent on auto commuting. For the following reasons, this is not expected to occur as a result of the CBD Tolling Alternative:

Table 6-26. Daily Worker Journeys To and Within the Manhattan CBD (All Modes of Transportation)

GEOGRAPHIC AREA OF ORIGIN	NO ACTION TOTAL JOURNEYS	NET CHANGE IN DAILY WORKER JOURNEYS BY TOLLING SCENARIO AS COMPARED TO THE NO ACTION ALTERNATIVE						
		A	B	C	D	E	F	G
New York City	**1,008,469**	**-4,288**	**-4,990**	**-5,698**	**-7,058**	**-7,718**	**-7,223**	**-5,869**
Bronx County	97,518	-607	-697	-920	-1,159	-1,346	-777	-1,109
Kings County (Brooklyn)	282,439	-1,776	-1,844	-2,533	-2,755	-3,274	-2,242	-1,976
New York County (Manhattan)	340,690	-908	-658	-816	-654	-289	-1,231	-1,390
Inside Manhattan CBD	164,814	282	80	490	666	835	475	279
Outside Manhattan CBD	175,876	-1,190	-738	-1,306	-1,320	-1,124	-1,706	-1,669
Queens County	260,444	-1,688	-2,448	-2,448	-3,109	-3,547	-3,820	-2,077
Richmond County (Staten Island)	27,378	691	657	1,019	619	738	847	683
Long Island Counties[1]	**128,802**	**2,610**	**3,191**	**2,451**	**2,470**	**2,975**	**1,834**	**3,400**
New York Counties North of New York City[2]	**101,745**	**-1,757**	**-1,334**	**-1,003**	**-1,473**	**-1,731**	**-1,498**	**-1,398**
New Jersey Counties[3]	**264,412**	**3,763**	**3,326**	**4,612**	**6,588**	**7,622**	**7,001**	**4,891**
Connecticut Counties[4]	**57,639**	**-365**	**-245**	**-336**	**-554**	**-1,134**	**-122**	**-1,074**
TOTAL	**1,561,067**	**-37**	**-52**	**26**	**-27**	**14**	**-8**	**-50**

Source: BPM, WSP 2021.

1 Long Island counties includes Nassau and Suffolk.

2 Counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.

3 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.

4 Connecticut counties include Fairfield and New Haven.

- **CTPP data suggest that the propensity to commute by auto is related more to distance from public transit and the availability of free parking, which can correlate with certain types of work, rather than to needs for commuting by auto inherently related to a worker's industry or occupational category.** Therefore, the increased cost for those who commute by car would not disproportionately affect the operations of a specific industry, although it may incentivize workers currently incentivized to drive by the availability of free parking to switch to a transit mode (promoting the goals of the Program).[71] The highest rate of auto commuting in the Manhattan CBD occurs in Census Tract 21 in Lower Manhattan (**Figure 6-5**), an area that includes part of Chinatown and several large municipal buildings. The availability of parking placards and/or free parking for some municipal employees likely contributes to the higher numbers of workers commuting by auto to Census Tract 21, rather than a business-specific need for personal automobiles. Within two East Village/Lower East Side census tracts that also have very high rates of auto commuting in the Manhattan CBD, over 25 percent of the jobs are associated with facilities that provide free parking.

71 As detailed in **Section 6.2.2**, the NAICS Finance, Insurance, Real Estate and Rental and Leasing industry category and the SOC Business and Financial Operations Specialists and Legal occupational categories had only slightly higher representation within the highest auto commute locations of the Manhattan CBD. Salaries within these occupations are relatively high, suggesting that workers would be less price-sensitive to the incremental cost associated with tolling, particularly when factoring for the value of shorter commute times due to reduced congestion.

- **Manhattan CBD locations with the highest auto-commuting mode share have relatively low concentrations of total commuters.** Within the area of the Manhattan CBD with the highest rate of people who commute by auto from locations outside the Manhattan CBD—in the East Village and Lower East Side neighborhoods—relatively few total workers from outside the Manhattan CBD commute to this area, representing just over 2 percent of all workers commuting from outside the Manhattan CBD into the Manhattan CBD. The disincentive to drive created by the Project would not adversely affect economic conditions within or outside of the Manhattan CBD.
- **The potentially affected workforce who work outside of the Manhattan CBD is small.** The BPM estimates that 12,535 Manhattan CBD residents commute by auto to work at jobs outside the Manhattan CBD represent approximately 0.01 percent of the regional labor force. Of those who drive to work in other locations in New York City, only 540 are driving to jobs located farther than one-half mile of a rail (subway or Staten Island Railway) station, express bus stop, or express stop. Those workers who drive to New Jersey collectively comprise less than 2 percent of the employment within any New Jersey municipality.
- **Most of the potentially affected workforce who work inside the Manhattan CBD live and/or work near transit:**
  - **Approximately 99 percent of auto commuters to the Manhattan CBD have jobs that are close to transit.**[72] The ease of transit access within the Manhattan CBD allows the subset of car commuters to the Manhattan CBD who would be discouraged by toll costs and do not have transit access near their homes, to instead drive to a transit station and complete their commute by transit. The estimated 8,470 employees who work at locations more than one-half mile from a subway station or SBS stop in the Manhattan CBD represent small fractions of all Manhattan CBD workers in any specific industry and occupational category.
  - **Of the estimated 142,506 people who currently commute into the Manhattan CBD by car, more than one-third drive from residences in New York City that are close to transit.** Most workers living in these parts of New York City have a relatively easy option of riding a subway or train to the Manhattan CBD.
- **For some auto commuters, the underlying benefits of driving would remain in place with or without a Manhattan CBD toll.** With a toll, many drivers would continue to drive, because the additional cost of the toll may be offset by the value of a shorter commute time due to reduced congestion, and in some cases, the value of free parking available to them by an employer.

With respect to Manhattan CBD reverse commuters, the BPM projections indicate that in the aggregate, there would be minimal overall change in the number of workers who commute from the Manhattan CBD to other regional locations because of the CBD Tolling Alternative (Table 6-27). As compared to the No Action Alternative, the differences range from a 0.8 percent work-journey decrease (80 workers) under Tolling Scenario B to a 2.2 percent decrease (835 workers) under Tolling Scenario E. Under Tolling Scenario B, there would be a slight increase in Manhattan CBD resident-workers commuting to jobs in Long Island counties and in Manhattan outside the Manhattan CBD. Under Tolling Scenario E, the decrease in

[72] It is noted that proximity to transit does not necessarily make it accessible to some disabled individuals.

Manhattan CBD resident-workers commuting to jobs outside of the Manhattan CBD could be due to those workers taking jobs vacated by non-CBD residents who were working in the Manhattan CBD, but who took jobs outside of the Manhattan CBD to avoid the toll. These levels of change in workforce commuting would not disrupt employment in any industry at the regional level. Even if all of the estimated 12,535 Manhattan CBD reverse commuters who drive to their jobs elected to change positions in order to avoid tolling, they represent less than 5 percent of the labor force living within the Manhattan CBD, and approximately 0.1 percent of the labor force in the region. As a result, the CBD Tolling Alternative would not be likely to adversely affect any particular industry because of its potential to affect reverse commuters from the Manhattan CBD.

Table 6-27. Daily Worker Journeys from the Manhattan CBD (All Modes of Transportation)

GEOGRAPHIC AREA OF DESTINATION	NO ACTION TOTAL JOURNEYS	NET CHANGE IN DAILY WORKER JOURNEYS BY TOLLING SCENARIO AS COMPARED TO THE NO ACTION ALTERNATIVE						
		A	B	C	D	E	F	G
New York City (not including Manhattan CBD)	**23,042**	**-107**	**55**	**-154**	**-313**	**-326**	**-206**	**-176**
Bronx County	1,009	19	30	33	-2	12	5	1
Kings County (Brooklyn)	5,369	-28	-36	-88	-183	-153	-123	-67
New York County (Manhattan) Outside Manhattan CBD	15,439	-118	120	-50	-112	-178	-79	-79
Queens County	1,205	16	-54	-42	-6	-2	-5	-21
Richmond County (Staten Island)	20	4	-5	-7	-10	-5	-4	-10
Long Island Counties[1]	**2,751**	**-165**	**8**	**-170**	**-242**	**-205**	**-218**	**-97**
New York Counties North of New York City[2]	**565**	**-28**	**-38**	**-23**	**-55**	**-58**	**-32**	**-67**
New Jersey Counties[3]	**9,756**	**97**	**-7**	**-69**	**23**	**-110**	**77**	**128**
Connecticut Counties[4]	**1,343**	**-79**	**-98**	**-74**	**-79**	**-136**	**-96**	**-67**
TOTAL	**37,457**	**-282**	**-80**	**-490**	**-666**	**-835**	**-475**	**-279**

Source: BPM, WSP 2021.

1. Long Island counites include Nassau and Suffolk.
2. New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.
3. New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.
4. Connecticut counties include Fairfield and New Haven.

Non-Work-Related Journeys

For non-work-related journeys, the BPM assumes that the total number of these discretionary journeys remains steady regionwide, but the destination of a non-work-related journey (e.g., a journey for shopping or entertainment) could change because of a change to the transportation network. **Table 6-28** presents the BPM results related to changes in non-work-related journeys (all modes) to the Manhattan CBD with the CBD Tolling Alternative as compared to the No Action Alternative. Under all tolling scenarios, the total number of these journeys would remain essentially the same between tolling scenarios (the small differences in total journeys are equivalent to rounding errors in the model results), but the destination of the non-work-related journeys would vary. The largest contributing factor in terms of reductions under all tolling scenarios would be forgone journeys to the Manhattan CBD from areas of Manhattan north of 60th Street. **Table 6-28** also shows marginal increases in non-work Manhattan CBD journeys originating within

the Manhattan CBD, likely due to reductions in congestion, which would encourage additional non-work journeys within the Manhattan CBD.

Table 6-29 provides additional detail on how the CBD Tolling Alternative would alter discretionary journey-making decisions; Tolling Scenario D is used in this example because it would result in the greatest reduction in non-work-journeys to the Manhattan CBD. The reductions in non-work-related journeys would be related to reductions in journeys by auto and offset by increases in journeys by public transit. Notable decreases in auto journeys would occur for Manhattan north of the Manhattan CBD, Brooklyn, and Queens.

Table 6-28. Net Change in Non-Work-Related Journeys To and Within the Manhattan CBD vs. No Action Alternative (All Modes of Transportation)

GEOGRAPHIC AREA OF ORIGIN	NO ACTION TOTAL	TOLLING SCENARIO –NET CHANGE						
		A	B	C	D	E	F	G
New York City	**796,263**	**-3,105**	**-1,213**	**-3,033**	**-6,027**	**-5,347**	**-2,795**	**-4,116**
Bronx County	41,511	-1,272	-540	-1,159	-1,804	-1,820	-1,197	-1,110
Kings County (Brooklyn)	80,405	-1,212	-407	-1,187	-2,323	-2,032	-1,015	-1,762
New York County (Manhattan)	601,900	-151	-538	-1,008	-1,036	-704	-769	-594
Inside Manhattan CBD	513,511	1,954	1,102	1,468	2,753	2,914	1,995	1,869
Outside Manhattan CBD	88,389	-2,105	-1,640	-2,476	-3,789	-3,618	-2,764	-2,463
Queens County	61,828	-1,190	-592	-1,183	-1,759	-1,405	-699	-1,415
Richmond County (Staten Island)	10,619	720	864	1,504	895	614	885	765
Long Island Counties[1]	**16,566**	**622**	**748**	**109**	**2**	**223**	**158**	**816**
New York Counties North of New York City[2]	**7,640**	**-478**	**-458**	**-450**	**-888**	**-891**	**-678**	**-574**
New Jersey Counties[3]	**46,807**	**2,186**	**2,775**	**3,380**	**2,894**	**3,149**	**3,498**	**3,256**
Connecticut Counties[4]	**1,514**	**-28**	**272**	**358**	**293**	**206**	**387**	**250**
TOTAL	**868,790**	**-803**	**2,124**	**364**	**-3,726**	**-2,660**	**570**	**-368**

Source: BPM, WSP 2021.

1. Long Island counties includes Nassau and Suffolk.
2. New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.
3. New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.
4. Connecticut counties include Fairfield and New Haven.

Table 6-29. Change in Regional Non-Work-Related Journeys To and Within the Manhattan CBD: Tolling Scenario D versus No Action Alternative

GEOGRAPHIC AREA OF ORIGIN	TOTAL NON-WORK RELATED JOURNEYS NO ACTION	TOTAL NON-WORK RELATED JOURNEYS SCENARIO D	CHANGE IN JOURNEYS	PERCENTAGE CHANGE IN JOURNEYS
New York City	**796,263**	**790,236**	**-6,027**	**-0.8%**
Bronx County	41,511	39,707	-1,804	-4.3%
Kings County (Brooklyn)	80,405	78,082	-2,323	-2.9%
New York County (Manhattan)	601,900	600,864	-1,036	-0.2%
Inside Manhattan CBD	513,511	516,264	2,753	0.5%
Outside Manhattan CBD	88,389	84,600	-3,789	-4.3%
Queens County	61,828	60,069	-1,759	-2.8%
Richmond County (Staten Island)	10,619	11,514	895	8.4%
Long Island Counties[1]	**16,566**	**16,568**	**2**	**0.0%**
New York Counties North of New York City[2]	**7,640**	**6,752**	**-888**	**-11.6%**
New Jersey Counties[3]	**46,807**	**49,701**	**2,894**	**6.2%**
Connecticut Counties[4]	**1,514**	**1,807**	**293**	**19.4%**
TOTAL	**868,790**	**865,064**	**-3,726**	**-0.4%**

Source: BPM, WSP 2021.

1. Long Island counties includes Nassau and Suffolk.
2. New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.
3. New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.
4. Connecticut counties include Fairfield and New Haven.

The BPM assumes that the total number of non-work-related journeys in the region would remain the same in the No Action and CBD Tolling Alternatives. This is a reasonable assumption given the size of the regional study area; non-work-related journeys that may no longer occur within the Manhattan CBD are expected to be captured within the broader study area. Reductions in journeys to the Manhattan CBD would likely be captured in other areas of Manhattan outside the Manhattan CBD, in New York City, or in the region. There would not be a loss of consumer spending on a regional basis, except for spending that would be forgone by consumers traveling by car to the Manhattan CBD, who could instead use a portion of their discretionary spending money for the toll. The toll would effectively reduce the overall expenditure potential for people traveling by car into the Manhattan CBD; this would reduce expenditure potential for individuals and the potential revenue that businesses would have captured but that would now be spent on the toll. As noted in **Chapter 18, "Agency Coordination and Public Outreach,"** during early public outreach for the Project in fall 2021, members of the public raised concern about potential effects of losses in consumer spending at businesses, cultural and sporting events, and tourist areas like Chinatown and Broadway. However, given that a vast majority of non-work-related journeys to the Manhattan CBD are not conducted by auto, that some auto journeys would transition to public transit, and that some auto journeys would continue (with potential reductions in some discretionary expenditures to compensate for the toll

cost), a reduction in non-work journeys to the Manhattan CBD would not be expected to substantively alter expenditures within any particular industry.[73]

[The tourism industry in the Manhattan CBD is not dependent on travel by personal vehicles or taxis/FHVs, because the Manhattan CBD and tourist destinations within it are very well-served by public transit. Travel writing on New York City frequently cites transit, especially the New York City subway system, as the most convenient way to get around New York City.[74] This is supported by a 2014 travel survey of visitors to the Empire State Building observation deck, a notable tourist attraction, which found that approximately 4 percent of the visitors arrived by private auto or taxi, and the remainder traveled by transit, walk, or tour bus modes.[75] Studies have identified investments in mass transit as important to supporting the health and growth of New York City's tourism industry, both before[76] and after[77] the COVID-19 pandemic. Furthermore, traffic congestion within the Manhattan CBD, which leads to low travel speeds and unreliable travel times, can contribute to a poor-quality experience for tourists.

Visitors from the surrounding region (i.e., New York, New Jersey, Connecticut, and Pennsylvania) often travel to New York City by rail transit rather than by automobile,[78] and for those who drive to the city, it is likely that many park their vehicles and shift to transit for travel within the city. Furthermore, driving to and from the Manhattan CBD is already expensive given the very limited availability of free or low-cost parking and the cost of taxi/FHV fares, and it is likely that tourists who drive have higher incomes. For these individuals, the additional cost of the toll may reduce their discretionary expenditures slightly or incentivize them to choose other modes of transportation during their visit but would be unlikely to cause them to forego a visit to the Manhattan CBD. At the regional level, any forgone non-work-related journeys to the Manhattan CBD and associated expenditure would be captured elsewhere.

Tourist visitation data from London, England, and Stockholm, Sweden, indicates that the number of tourists visiting these cities continued to grow following the implementation of congestion-based pricing programs in 2003 and 2007, respectively. In London, the number of visiting tourists increased from 11 million in 2002 to more than 19 million in 2016. In Stockholm, the number of commercial overnight stays increased by

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73 Literature research of congestion-based pricing programs in London, England, Stockholm, Sweden, ***[and Singapore]*** found that these programs had not adversely affected retail markets. Retail businesses in the central London charging zone have outperformed retail businesses in inner and outer London in terms of sales, profitability, and employment growth. Overall, five years after the event there is no measurable evidence of any differential impact of the central London congestion charging scheme on business and economic activity, at the aggregate level, based on analysis and surveys conducted (https://content.tfl.gov.uk/central-london-congestion-charging-impacts-monitoring-sixth-annual-report.pdf). In Stockholm, studies of retail markets did not reveal adverse effects resulting from congestion charges. A durables survey within shopping centers, malls, and department stores conducted during the Stockholm program's trial period found that these entities developed at the same rate as the rest of the country; the same was true for other retail sectors *[(https://www.transportportal.se/swopec/cts2014-7.pdf). In Singapore, surveys suggested that the pricing did not change business conditions or location patterns, and that overall, the business community responded positively to the program (https://ops.fhwa.dot.gov/publications/fhwahop08047/intl_cplessons.pdf).]*

74 *[https://www.nycgo.com/plan-your-trip/basic-information/transportation-in-nyc/getting-around.]*

75 *[Vanderbilt Corridor and One Vanderbilt Final Environmental Impact Statement. March 2015. https://www1.nyc.gov/assets/planning/download/pdf/applicants/env-review/vanderbilt/10_feis.pdf. pg. 10-7.]*

76 *[Ibid. pg. 34.]*

77 *[Office of the New York State Comptroller. The Tourism Industry in New York City" Reigniting the Return. April 2021. Available: https://www.osc.state.ny.us/files/reports/osdc/pdf/report-2-2022.pdf. pg. 16.]*

78 *[NYC and Co. https://indd.adobe.com/view/e91e777a-c68b-4db1-a609-58664a52cffd. pg. 7.]*

approximately 60 percent from 2008 to 2019. These data suggest that congestion-based pricing schemes did not adversely affect the tourism industries of these cities. In addition, in the central London charging zone, the hotel and restaurant sectors (both of which are dependent on tourism) registered stronger business performance since the introduction of charging, with consistent growth in employment and the numbers of businesses.[79]

Overall, these data support the EA conclusion that the CBD Tolling Program would not be expected to substantively alter expenditures within any particular industry, including the tourism industry, restaurants, and Broadway.]

The CBD Tolling Alternative would also provide regional benefits by establishing a reliable, recurring local source of funding for MTA capital projects, which would allow MTA to reinvest in and improve its transportation network. This would be expected to facilitate growth in non-work-related journeys to the Manhattan CBD.

Taxi and For-Hire Vehicle Industry

Under some tolling scenarios there could be an increase in taxi and FHV fares that could reduce demand and industry revenues for taxis and/or FHVs.[80] As detailed in **Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling,"** the tolling scenarios and additional analyses assess a variety of tolling policies for taxis and FHVs ranging from unlimited tolling for taxis and FHVs each day to a complete exemption from paying the Manhattan CBD toll.

The TLC requires that passengers reimburse the taxi driver for any toll costs during the trip; when no passengers are in the vehicle, drivers pay the toll today as part of the cost of doing business. TLC rules for high-volume FHVs (i.e., Uber and Lyft) and require that FHV services collect and remit to the TLC information on the itemized fare for the trips charged to the passengers, including the fare, toll, taxes and gratuities. ***[As updated for this Final EA, the Project Sponsors have committed that TBTA will ensure that a toll structure with tolls of no more than once per day for taxis or FHVs is included in the final toll structure.]***

New York City's Commitment to Supporting Taxi and FHV Drivers

In 2019, New York City became the first city in the world to implement a trip-based, guaranteed minimum pay standard for high-volume FHV drivers, whether they drive their own vehicle or lease an FHV. The TLC also modified rules for yellow and green taxis to increase driver income protections, including reducing the daily maximum credit card surcharge and increasing accessible dispatch fees.

In 2021, the City implemented a medallion relief program and loan guaranty program to provide relief for owners with five or fewer medallions. Both programs provide financial assistance and free legal representation to help negotiate with lenders to reduce loan balances and lower monthly payments.

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79 *[Transport for London, July 2007. Central London Congestion Charging: Impacts Monitoring (Fifth Annual Report).]*

80 Paratransit vehicles, although part of the taxi/FHV industry, are not addressed in this section because the CBD Tolling Alternative would not impose a new toll on paratransit vehicles. With the CBD Tolling Alternative, paratransit vehicles would benefit from reduced congestion on some roadways within the Manhattan CBD.

Table 6-30 shows the projected reductions in daily VMT for each of the various tolling scenarios without modifications.[81] The VMT estimates shown in the table do not include cruising miles without a customer, and only reflect daily VMT for travel when the taxi/FHV has a customer. As shown in the table, the CBD Tolling Alternative would reduce the overall VMT for taxis and FHVs regionwide by 1 to 3 percent. These reductions would be greatest in New York City, ranging from 5 to 9 percent in tolling scenarios that do not include a cap or exemption for tolls on taxis and FHVs (Tolling Scenarios A, D, and G) and 1 to 5 percent in those that do have caps and/or exemptions (Tolling Scenarios B, C, E, and F).

The CBD Tolling Alternative would result in larger reductions in taxi/FHV VMT within the Manhattan CBD, which is the core service area for yellow taxis, as well as in Manhattan overall. As shown in Table 6-30, under Tolling Scenarios A, D, and G, which would have uncapped tolls for both taxis and FHVs, reductions in taxi/FHV VMT in the Manhattan CBD would range from almost 7 percent for Tolling Scenario A to close to 17 percent for Tolling Scenario D. In Manhattan overall, VMT reductions would range from 11 to 17 percent. Under Tolling Scenarios C and F, which would exempt taxis but would toll FHVs up to three times a day, VMT reductions would range from 3.5 percent to 7.9 percent in the Manhattan CBD and 7 to 10 percent for Manhattan overall. Given that taxis would not be tolled under Tolling Scenarios C and E, it is likely that taxis would experience increases in VMT while FHVs would experience greater VMT reductions.

In the Tolling Scenarios B and F, in which taxis and FHVs would be tolled a maximum of once per day, the reduction in taxi/FHV VMT within the Manhattan CBD and Manhattan overall would be lower and in Tolling Scenario F, taxi/FHV VMT within the Manhattan CBD is predicted to increase slightly because of the combination of the larger toll cost, which would make taxi/FHV a more attractive mode, and the reduction in congestion, which would increase the utility of commuting by taxi/FHV within the Manhattan CBD).

In addition, in response to concerns expressed during the public outreach process with respect to the anticipated effects of the Project on taxi and FHV drivers, the Project Sponsors considered modified several modified tolling scenarios with caps and/or exemptions for taxis and FHVs to understand the effects of such a modification. This included modifications of Tolling Scenarios A and D with a cap on tolls of once per day for taxis and FHVs (like Tolling Scenarios B and F), a modified Tolling Scenario D with both taxis and FHVs exempt from the toll, and a variation of Tolling Scenario G (referred to as Tolling Scenario G1) with a cap on tolls of once per day for taxis and FHVs. The analysis conducted demonstrated that with these modifications, these tolling scenarios would have substantially less reduction in taxi/FHV VMT in the Manhattan CBD. For more information, see Subchapter 4A, **"Transportation: Regional Transportation Effects and Modeling."** Overall, the more exemptions and caps provided, the higher tolls need to be to meet the Project's congestion and revenue objectives. However, if taxis and FHVs are charged for each trip, the demand for their service would decline, as would the number of trips they make.

[81] Taxis and FHVs are a single mode in the BPM and therefore cannot be presented separately.

Table 6-30. Net Change in Taxi/For-Hire Vehicle Daily Vehicle-Miles Traveled vs. No Action Alternative

GEOGRAPHIC AREA	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
New York City	**2,503,176**	**-128,847 (-5.1%)**	**-29,731 (-1.2%)**	**-84,406 (-3.4%)**	**-219,068 (-8.8%)**	**-130,412 (-5.2%)**	**-25,521 (-1.0%)**	**-147,687 (-5.9%)**
Bronx County	272,450	-8,392 (-3.1%)	-5,717 (-2.1%)	-6,426 (-2.4%)	-9,346 (-3.4%)	-3,991 (-1.5%)	-1,959 (-0.7%)	-7,831 (-2.9%)
Kings County (Brooklyn)	373,255	-33,855 (-9.1%)	-20,648 (-5.5%)	-10,247 (-2.7%)	-37,923 (-10.2%)	-27,854 (-7.5%)	-7,095 (-1.9%)	-39,183 (-10.5%)
New York County (Manhattan)	715,505	-77,843 (-10.9%)	-19,553 (-2.7%)	-51,989 (-7.3%)	-119,349 (-16.7%)	-73,223 (-10.2%)	-17,076 (-2.4%)	-87,944 (-12.3%)
Inside Manhattan CBD	323,998	-21,498 (-6.6%)	+15,020 (+4.6%)	-11,371 (-3.5%)	-54,476 (-16.8%)	-25,621 (-7.9%)	+4,962 (+1.5%)	-27,757 (-8.6%)
Outside Manhattan CBD	391,507	-56,345 (-14.4%)	-34,573 (-8.8%)	-40,618 (-10.4%)	-64,873 (-16.6%)	-47,602 (-12.2%)	-22,038 (-5.6%)	-60,187 (-15.4%)
Queens County	1,085,040	-3,873 (-0.4%)	+21,258 (+2.0%)	-10,804 (-1.0%)	-47,911 (-4.4%)	-19,342 (-1.8%)	+4,979 (+0.5%)	-7,812 (-0.7%)
Richmond County (Staten Island)	56,926	-4,884 (-8.6%)	-5,071 (-8.9%)	-4,940 (-8.7%)	-4,539 (-8.0%)	-6,002 (-10.5%)	-4,370 (-7.7%)	-4,917 (-8.6%)
Long Island Counties[1]	**291,624**	**-1,050 (-0.4%)**	**+2,836 (+1.0%)**	**+6,816 (+2.3%)**	**-3,159 (-1.1%)**	**+3,846 (+1.3%)**	**+9,153 (+3.1%)**	**-2,775 (-1.0%)**
New York Counties North of New York City[2]	**222,684**	**-3,316 (-1.5%)**	**+1,047 (+0.5%)**	**-206 (-0.1%)**	**-4,694 (-2.1%)**	**-2,547 (-1.1%)**	**-1,118 (-0.5%)**	**-2,905 (-1.3%)**
New Jersey Counties[3]	**1,181,690**	**+9,142 (+0.8%)**	**+13,582 (+1.1%)**	**+8,656 (+0.7%)**	**+12,899 (+1.1%)**	**+17,283 (+1.5%)**	**+15,094 (+1.3%)**	**+17,455 (+1.5%)**
Connecticut Counties[4]	**116,356**	**-2,922 (-2.5%)**	**-1,762 (-1.5%)**	**-4,273 (-3.7%)**	**-3,455 (-3.0%)**	**-4,235 (-3.6%)**	**-2,496 (-2.1%)**	**-1,903 (-1.6%)**
TOTAL	**4,315,530**	**-126,993**	**-14,028**	**-73,413**	**-217,477**	**-116,065**	**-4,888**	**-137,815**
PERCENTAGE CHANGE		**-2.9%**	**-0.3%**	**-1.7%**	**-5.0%**	**-2.7%**	**-0.1%**	**-3.2%**

Source: BPM, WSP 2021.
Note: Projections include vehicle-miles traveled only during fares and do not include cruising without passenger(s).
1. Long Island counties includes Nassau and Suffolk.
2 New York counties north of New York City include Dutchess, Orange, Putnam, Rockland, and Westchester.
3 New Jersey counties include Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren.
4 Connecticut counties include Fairfield and New Haven.

Under tolling scenarios that would toll taxis and/or FHVs more than once a day, customers could choose to avoid the toll by switching to transit, walking, or biking to their destination in the Manhattan CBD, thereby reducing the frequency of taxi/FHV utilization. A reduction in congestion in the Manhattan CBD would improve drive-times and reduce passenger costs. However, the potential decrease in overall demand for taxis and FHVs *[in tolling scenarios that toll taxis and/or FHVs more than once a day]* could reduce employment in the taxi and FHV industries. The predicted change in overall taxi/FHV travel characteristics indicates that there could be some shift in business practices within the industry, particularly for yellow cabs operating in Manhattan. The projected reductions in VMT indicate potential economic costs within an industry in flux where journeys have already been shifting from taxis to FHVs and could correlate to lost revenues for both taxis and FHVs operating in New York City. Since driver income is directly related to the miles they travel with paying customers, these reductions could result in reductions in taxi and FHV employment. Chapter 17, "Environmental Justice," evaluates this potential adverse effect on taxi and FHV drivers in more detail *[and describes TBTA's commitment, new to the Final EA, to ensure that a toll structure with tolls of no more than once per day for taxis or FHVs is included in the final toll structure to avoid an adverse effect on taxi and FHV drivers from the Project.]*

In terms of economic impacts on businesses and industries, the change in taxi and FHV operations and business practices *[without the new commitment described]*, while adverse for taxi and FHV drivers, would not *[have resulted]* in an adverse economic impact on the industry overall.[82] The potential reductions in revenue and employment would not be of an amount that could jeopardize the overall viability of the taxi/FHV industry within the region. Based on historic data from the TLC's Fact Book for 2018, the industry has experienced substantial fluctuations year to year in key metrics such as active drivers and daily average trips; the industry adjusts to remain viable as an industry and meet demand. For example, there were reductions in the number of active livery cars, yellow cabs, and green cabs beginning in 2015 with the introduction of high-volume FHV ride-hailing services (Figure 6-7). Between January 2016 and January 2019, the numbers of active yellow cabs, green cabs, and livery cars decreased by 11.1 percent, 45.0 percent, and 55.4 percent, respectively. There were also precipitous decreases in demand for taxi/FHV services during the height of the COVID-19 pandemic (Figure 6-8). Nevertheless, under both circumstances that industry has continued to provide service. With the CBD Tolling Alternative consumer demand for taxi/FHV service would continue to be met, and those consumers who are willing to pay the toll would be driven to locations within the Manhattan CBD. The taxi/FHV industry would continue to operate throughout the region and would continue to be able to meet the needs of its consumer base.

Chapter 17, "Environmental Justice," provides additional analysis of the potential for job losses in the taxi and FHV industry, where the majority of drivers identify as minority populations *[and describes in further detail the TBTA's commitment to ensure that a toll structure with tolls of no more than once per day for taxis or FHVs is included in the final toll structure]*.

[82] As noted in Chapter 5, Section 430 of the 2021 *CEQR Technical Manual*, an impact of a project that would substantially impair the ability of certain specific industries or categories or business to continue operating within New York City may be considered significant and adverse.

Paratransit Vehicles

With the CBD Tolling Alternative, qualifying vehicles transporting persons with disabilities would be exempt from the toll.[83] This includes Access-A-Ride paratransit service, which provides public transportation for customers with disabilities or certain qualifying health conditions. The CBD Tolling Alternative would provide benefits to improve paratransit services, such as reduced roadway congestion resulting in travel-time and reliability improvements.

Buses

Given the Project goal of reducing congestion in the Manhattan CBD, while also creating a new recurring funding source to support the MTA's Capital Program for funding public transportation capital projects, the various tolling scenarios consider crossing credits, discounts, and/or exemptions for buses because those transporting passengers presumably reduce vehicle congestion. The standard bus tolling rate can be set at a value distinct from other classes. A discounted rate may represent a lower rate for buses as compared to the truck rate (non-franchise buses are currently charged truck rates at TBTA facilities) or may be a discounted rate against the bus rate for certain types of buses (e.g., public transit buses). As detailed in **Chapter 2, "Project Alternatives,"** the tolling scenarios present a range of potential charging options for buses.

To the extent buses are charged full or discounted tolls under the tolling scenarios, the cost of the toll would be expected to be absorbed into overall operating costs. For subsidized public transit, these costs could result in additional subsidy requirements and a portion could ultimately be passed along to passengers in terms of ticket prices for carriers with variable ticket pricing or could be a component in periodic fare adjustments for fixed fare transit systems. Given the high passenger volumes of most bus services, the small incremental cost borne by any given passenger is not expected to be an amount that would deter ridership for a vast majority of passengers, and reduced ridership would not be expected to jeopardize the viability of bus service operations.

For non-subsidized service, increased operating costs would be expected to be passed on to the passenger or could result in reduced services. Smaller volume services such as commuter vans and jitney buses may experience a greater proportion of reduced ridership; however, if some price-sensitive commuter van and jitney riders switch to transit, they could benefit from the transit improvements facilitated by the CBD Tolling Alternative. For tour and charter buses, costs would be lower since the frequency of crossing in and out of the Manhattan CBD is much lower than public buses, and the cost of the toll would be passed on to a larger number of passengers.

Movement of Goods and Services, Including Freight Transport

As noted in **Chapter 18, "Agency Coordination and Public Outreach,"** during early public outreach for the Project in fall 2021 members of the public expressed concerns about the potential for increases in fees and other services such as deliveries within the Manhattan CBD. With the CBD Tolling Alternative, the volumes

[83] As currently designed, qualifying vehicles transporting a person with disabilities include vehicles with government-issued disability license plates and fleet vehicles owned or operated by organizations and used exclusively to provide transportation to people with disabilities.

of truck journeys into and within the Manhattan CBD are expected to remain similar to today because the need to deliver goods would remain the same; deliveries would still need to be made to restaurants, businesses, and residents regardless of the Manhattan CBD tolling implementation. As a result, the BPM assumes that journey origins and destinations of trucks and other commercial vehicles would remain constant between the No Action Alternative and all the tolling scenarios. In some cases, shipments could be consolidated to maximize the amount of product delivered if the route would incur the toll.

With the CBD Tolling Alternative, delivery trucks would incur an additional cost from a toll. Table 6-31 identifies the toll rates for various truck types under each of the tolling scenarios. As shown in Table 6-31, the actual amount paid by an individual truck per day would vary based on the toll rate, whether there is a cap on the number of tolls per day, and the number of times a truck is detected entering or remaining in the Manhattan CBD. Depending on the number of trips a truck makes, the total cost might be less in a tolling scenario with a cap on the number of tolls per day or a tolling scenario with a lower toll rate but no cap.

Businesses in the Manhattan CBD that would be more likely to be adversely affected by increased delivery costs associated ***[with]*** tolling increases are small businesses that have a high rate of deliveries. In general, micro-businesses, which are small businesses with fewer than 20 employees, would be most sensitive to delivery cost increases. The types of businesses in the Manhattan CBD that would most likely be affected would be small businesses in the Retail Trade industry since they are dependent on frequent deliveries of smaller loads, and the cost of delivery of goods constitutes a higher portion of their operating costs. These include grocery stores, restaurants, and small market convenience stores. As shown in Table 6-4, approximately 10 percent of businesses in the Manhattan CBD are classified as Retail Trade. Although small independent grocery/convenience stores are not uniquely identified in Table 6-4, they would most likely be represented by micro-businesses in the Supermarkets and Other Grocery Except Convenience Stores (NAICS Code 445110) and Convenience Stores (NAICS Code 445120) industry sub-categories. There are approximately 600 such businesses within the Manhattan CBD, representing slightly less than 1 percent (0.7 percent) of all businesses within the Manhattan CBD. As described below, any cost increase associated with the ***[incremental toll costs due to the]*** CBD Tolling Alternative that ***[are]*** passed along to receiving businesses would be distributed among several customers per toll charge (since trucks make multiple deliveries) especially for businesses, including small businesses and micro-businesses, receiving smaller deliveries, thereby minimizing the effect of the toll increases on any individual business.

Table 6-31. Truck Treatment by Tolling Scenario

PARAMETER[1]	SCENARIO A Base Plan	SCENARIO B Base Plan with Caps and Exemptions	SCENARIO C Low Crossing Credits for Vehicles Using Tunnels to Access the CBD, with Some Caps and Exemptions	SCENARIO D High Crossing Credits for Vehicles Using Tunnels to Access the CBD	SCENARIO E High Crossing Credits for Vehicles Using Tunnels to Access the CBD, with Some Caps and Exemptions	SCENARIO F High Crossing Credits for Vehicles Using Manhattan Bridges and Tunnels to Access the CBD, with Some Caps and Exemptions	SCENARIO G Base Plan with Same Tolls for All Vehicle Classes
Potential Crossing Credits							
Credit Toward the CBD Toll for Tolls Paid at the Queens-Midtown, Hugh L. Carey, Lincoln, Holland Tunnels	No	No	Yes	Yes	Yes	Yes	No
Credit Toward the CBD Toll for Tolls Paid at the Robert F. Kennedy, Henry Hudson, George Washington Bridges	No	No	No	No	No	Yes	No
Potential Exemptions and Limits (Caps) on Number of Tolls per Day							
Small and large trucks	No cap	Twice per day	No cap	No cap	No cap	Once per day	No cap
Approximate Toll Rate (Small Truck / Large Truck) [2, 3]							
Peak [4]	$18 / $28	$20 / $30	$28 / $42	$38 / $57	$46 / $69	$65 / $82	$12 / $12
Off Peak [5]	$14 / $21	$15 / $23	$21 / $32	$29 / $43	$35 / $52	$49 / $62	$9 / $9
Overnight [6]	$9 / $14	$10 / $15	$14 / $21	$19 / $29	$23 / $35	$33 / $41	$7 / $7

1 The information in this table was used for modeling purposes to evaluate the range of effects resulting from implementation of the CBD Tolling Alternative. Actual toll rates, potential crossing credits/exemptions and/or other discounts, and the time of day when toll rates would apply would be determined by the TBTA Board after recommendation by the Traffic Mobility Review Board. **Appendix 2E, "Project Alternatives: Definition of Tolling Scenarios,"** provides more detailed information on the rates, potential crossing credits/exemptions, and/or other discounts assumed for each tolling scenario.

2 Tolls would be higher during peak periods when traffic is greatest. These would be defined by TBTA in the final toll schedule. All tolling scenarios also include a higher toll on designated "Gridlock Alert" days, although the modeling conducted for the Project did not reflect this higher toll since it considers typical days rather than days with unusually high traffic levels.

3 Toll rates are using E-ZPass and are rounded. For all tolling scenarios, different rates would apply for vehicles not using E-ZPass.

4 Peak is 6:00 a.m. to 8:00 p.m. on weekdays except for Scenario F, where it is 6:00 a.m. to 10:00 a.m. and 4:00 p.m. to 8:00 p.m., and on weekends when peak is 10:00 a.m. to 10:00 p.m.

5 Off peak is 8:00 p.m. to 10:00 p.m. on weekdays except for Scenario F, where it is 10:00 a.m. to 4:00 p.m.

6 Overnight is 10:00 p.m. to 6:00 a.m. on weekdays except for Scenario F, where it is 8:00 p.m. to 6:00 a.m., and on weekends when overnight is 10:00 p.m. to 10:00 a.m.

[In addition, the incremental cost of the new toll passed to receivers could be further diluted by cost savings realized by shippers due to reduced congestion.] The CBD Tolling Alternative would reduce costs for truck deliveries related to the time spent making the delivery and costs associated with parking tickets. Specifically, with a reduction in congestion in the Manhattan CBD, truckers could make their deliveries more quickly, reducing labor costs associated with the delivery. In addition, with fewer automobiles entering the Manhattan CBD each day, the demand for parking would be reduced, which would free up legal curbside parking for delivery vehicles. Delivery trucks may be able to find legal parking more readily in the Manhattan CBD, thereby reducing the incidence of ticketing (fines for which frequently exceed $1,000 per truck per month[84]). *[In the New York City metropolitan area, service times (defined as the total time spent by a driver at the customer location) consistently exceeded an hour during the morning hours, which is when the bulk of deliveries are made. Reducing travel and service times would decrease the cost associated with delivery operations and, ultimately, lower the cost of the products consumed in New York City.[85]]* The extent of delivery cost savings would vary depending on the toll cost, the delivery route, timing of delivery, and the level of reduced congestion along the route that would be realized under the tolling scenarios.

[There are also less obvious business costs associated with congestion that could be reduced, such as the cost of remaining open for longer hours to process late deliveries; penalties for lost business revenue associated with missed schedules; cost of spoilage for time-sensitive, perishable deliveries; cost of maintaining greater inventory to cover the undependability of deliveries; costs of reverting to less efficient production scheduling processes; and the additional cost incurred because of access to reduced markets for labor, customer, and delivery areas.[86]

Review of research on congestion-based pricing programs in Singapore; London, England; and Stockholm, Sweden found that these programs had not adversely affected retail markets. In Singapore, surveys suggested that the pricing did not change business conditions or location patterns, and that overall, the business community responded positively to the program.[87] In London, analyses and surveys indicate congestion pricing has neutral regional economic impacts: five years after implementation of the central London congestion charging scheme there was no measurable evidence of any differential impact of the pricing on business and economic activity at the aggregate level. Annual surveys suggest businesses in the priced zone have outperformed those outside, with retail businesses in the central London charging zone outperforming retail businesses in inner and outer London in terms of sales, profitability, and employment growth.[88] In Stockholm, studies of retail markets did not reveal adverse effects resulting from congestion charges. A durables survey within shopping centers, malls, and department stores conducted during the

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84 Holguin-Veras, Jose, et al. September 2010. *Integrative Freight Demand Management in the New York City Metropolitan Area*. http://www.nyc.gov/html/dot/downloads/pdf/ohd-final-report.pdf.

85 *[Ibid.]*

86 *[Cambridge Systematics, Inc. and Texas Transportation Institute. September 2005. Traffic Congestion and Reliability Trends and Advanced Strategies for Congestion Mitigation. https://ops.fhwa.dot.gov/congestion_report/congestion_report_05.pdf.]*

87 *[K.T. Analytics, Inc. August 2008. Lessons Learned from International Experience in Congestion Pricing, Final Report.]*

88 *[K.T. Analytics, Inc. August 2008. Lessons Learned from International Experience in Congestion Pricing, Final Report and Transport of London, July 2008, Central London Congestion Charging Impacts Monitoring.]*

Stockholm program's trial period found that these entities developed at the same rate as the rest of the country; the same was true for other retail sectors.[89]

In recognition of the concerns of small businesses on the effects of the Project, the Project Sponsors have committed to establishing a Small Business Working Group (SBWG). If the Project is approved, the purpose of this group will be to share information about implementation of the Project, findings from evaluating the effects of the Project, and to solicit ongoing input on how businesses are being affected. The SBWG would meet six months prior to Project implementation, six months after the implementation, and annually thereafter.

During public outreach, some commenters expressed concern that the new toll would result in higher delivery costs that would be passed on to consumers in the form of higher prices for goods and services in the Manhattan CBD. As noted above, while the new CBD toll would increase the cost of truck deliveries to the Manhattan CBD for some shippers (because of the price of the new toll), it would reduce it for others because of travel time savings, the potential for reduced costs associated with parking tickets, and other potential cost savings.] Incremental toll costs that are passed along to receiving businesses would be passed in a diluted fashion because shippers would allocate the toll costs among the multiple receivers on a journey (within New York City, averaging 5.5 stops per journey).[90] Shippers to small retail stores *[who make multiple]* stops would share the toll cost among those multiple receivers. An incremental cost to any one retail store would be passed along as an incremental cost to consumers but would represent a very small component of the retail price charged to the consumer.

As incremental toll costs would be diluted among receivers, the receivers would retain a role as decision-maker for delivery hours, and *[research indicates that many]* receivers *[may]* prefer regular-hour deliveries because they typically have more staff on hand, as opposed to off-hour deliveries that could require additional staff, security, lighting, and other costs.[91] Therefore, tolling, as well as tolling with peak- and off-peak rate variation, would not likely substantially alter urban freight delivery. Separate research from Stockholm, Sweden about congestion pricing indicates that commercial-vehicle traffic, such as truck traffic, has a higher willingness to pay for decreased travel time and is relatively insensitive to changes in price compared with private passenger-trips.[92] However, the toll rates in Stockholm generally fall well below the toll rates contemplated under the tolling scenarios[93], and therefore with the CBD Tolling Alternative the lower off-peak rates may have a stronger influence on receiver decision-making if a business is incurring additional costs during peak delivery times.

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89 *[Eliasson, Jonas, KTH Royal Institute of Technology, prepared for the Centre for Transport Studies Stockholm, July 2014. The Stockholm Congestion Charges: An Overview.]*

90 Holguin-Veras, Jose, et al. September 2010. *Integrative Freight Demand Management in the New York City Metropolitan Area*. http://www.nyc.gov/html/dot/downloads/pdf/ohd-final-report.pdf.

91 Ibid.

92 Börjesson, Maria. 2018. *Long-Term Effects of the Swedish Congestion Charges*. International Transport Forum. https://www.itf-oecd.org/sites/default/files/docs/swedish-congestion-charges.pdf.

93 Charges for a single entry in Stockholm range from 11 to 45 Swedish Krona (SEK) (approximately $1.14 to $4.66 USD) during peak seasons, and 11 to 35 SEK ($1.14-$3.62 USD) in off-peak seasons. Vehicles are charged for every entry with a maximum toll per day for any vehicle of 135 SEK, or $13.98 USD (during off-peak season, the maximum toll is 105 SEK, or $10.87 USD). All vehicles are subject to the same fee schedule.

With the CBD Tolling Alternative, some trucks with origins and destinations outside the Manhattan CBD that currently pass through the Manhattan CBD enroute to their destinations in the No Action Alternative could choose a different route to avoid the toll with the CBD Tolling Alternative. This routing decision would be based on consideration of the cost of the toll versus the cost of the alternative routing, which could be longer or more time-consuming. These trucks would still reach their destination, using a different route than they do today. ***[Based on the tolling scenarios evaluated, which have off-peak and overnight tolls that are between 50 and 75 percent of peak tolls for all vehicles, t]***he BPM projects a reduction in truck trips passing through the Manhattan CBD ranging from approximately 1,700 truck trips in Tolling Scenario G[94] to nearly 6,800 truck trips in Tolling Scenario F compared to the No Action Alternative (**Table 6-32**). While in the No Action Alternative, 25 percent of the trucks entering the Manhattan CBD would not have destinations in the Manhattan CBD and would be passing through***[, i]***n Tolling Scenario F, with the highest tolls, the share would drop to 6 percent. ***[Tolling Scenario G, with the lowest overnight toll rate for trucks, would have the smallest diversion of truck trips to areas outside the Manhattan CBD.]***

[For the Final EA, the Project Sponsors have added two new mitigation commitments to incentivize off-peak truck deliveries and reduce the number of trucks that divert around the Manhattan CBD: 1) a commitment to further reduce overnight toll rates; and 2) a commitment to expand NYCDOT's Off-Hours Delivery Program, a pilot program that provides support for businesses that shift their deliveries to off-peak periods.[95] The reduction of overnight toll rates would also benefit some workers and businesses.]

Table 6-32. Change in Daily Through Truck Trips via the Manhattan CBD, No Action Alternative vs. Tolling Scenarios

PARAMETER	NO ACTION	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
Truck Trips Through Manhattan CBD	8,392	3,746	3,424	3,139	2,705	1,788	1,607	6,657
Difference from No Action Alternative	—	-4,645	-4,967	-5,253	-5,687	-6,604	-6,784	-1,734

Source: BPM, WSP 2021.

6.4 NEIGHBORHOOD-LEVEL ASSESSMENT

In addition to the regional effects of the Project discussed in **Section 6.3**, the changes in regional travel patterns resulting from the CBD Tolling Alternative also have the potential to affect localized community and neighborhood economic conditions if travel patterns at transportation hubs (where travelers shift modes) or near the 60th Street Manhattan CBD boundary change in a way that could lead to changes in economic conditions. This section of the chapter evaluates the potential for the Project to result in this type

94 Tolling Scenario G is similar to the Stockholm, Sweden program in that all vehicles are subject to the same fee schedule, resulting in relatively low toll rates for trucks and a greater willingness to absorb (rather than avoid) the cost of tolls.

[95 https://www.nyc.gov/html/dot/downloads/pdf/ssi10-offhour.pdf.]

of localized change and whether such a change could lead to indirect displacement effects and changes in the operations of certain industries.

6.4.1 Study Areas

This section considers whether and where the CBD Tolling Alternative could substantively influence economic conditions at a local level, and thus warrant a neighborhood-level assessment. As detailed below, the identified study areas are locations where the CBD Tolling Alternative could indirectly alter land use and economic patterns within a neighborhood or neighborhoods. This section considers the effects of the CBD Tolling Alternative on transportation hubs, neighborhoods where vehicular traffic would increase or decrease, and the area close to the 60th Street Manhattan CBD boundary in Manhattan.

6.4.1.1 Transportation Hubs

With the CBD Tolling Alternative, certain public transportation hubs would experience an increase in transit ridership as more travelers to and from the Manhattan CBD select to take public transportation rather than personal transportation or taxis/FHVs in order to avoid the toll. The economic consideration at these transportation hubs is whether the increased consumer demand generated by the additional riders could substantively alter market forces in the immediate area of the transportation hubs, leading to a change of uses and neighborhood character. For example, this theoretically could occur if increased spending from new consumers in retail corridors near these public transportation hubs then led to increased property values, which in turn led to increased rents. To the extent that existing businesses would experience an increase in foot traffic or demand such that property values would be meaningfully affected, the resultant increase in rents could be offset by increased sales revenues. However, non-retail uses—or retail uses that do not cater to the new demand—may not benefit from increased sales, which in theory could lead to turnover of businesses.[96]

As detailed in **Subchapter 4C, "Transportation: Transit,"** the shift of some portion of journeys to and from the Manhattan CBD from automobile to transit would result in a relatively small overall change in regional transit ridership of 1 to 3 percent across all transit service types in the region. Outside the key Manhattan CBD transit hubs, where the increase in transit riders would be the most concentrated, the distribution of ridership changes is not expected to introduce additional consumer expenditure potential that could substantively alter real estate market conditions or change retail sales in and around any given transit station in the region. Therefore, the CBD Tolling Alternative does not have the potential to substantively alter market conditions in neighborhoods surrounding transportation hubs, and no further analysis of this concern is warranted.

[96] In addition to this economic effect on businesses, an increase in property values could also affect residences. This type of indirect displacement is discussed in **Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion,"** which concludes that the CBD Tolling Alternative would not result in adverse effects related to indirect residential displacement.

6.4.1.2 Neighborhood Streets Experiencing Increases or Decreases in Traffic

The CBD Tolling Alternative would result in an overall net reduction in auto journeys to and from the Manhattan CBD. Depending on the tolling scenario and the specific crossing credits included for other tolls paid at bridges and tunnels, certain local streets are projected to experience increases in vehicle traffic from route diversions. **Subchapter 4B, "Transportation: Highways and Local Intersections,"** provides detail on these locations and presents the results of intersection-level traffic impact analysis. The predicted changes in traffic volumes would be small compared to the overall volume of traffic on city streets during the day. As a result, there would be no anticipated change to the overall operation or character of local streets and no effect on economic conditions.

Increases and decreases in vehicle traffic along road segments resulting from the CBD Tolling Alternative would not substantively alter local market conditions for the following reasons:

- **These locations already experience traffic at levels that influence market conditions.** Areas where traffic volumes would increase already experience high levels of vehicle traffic, and in any case, local market conditions are more heavily influenced by existing pedestrian traffic. Therefore, such changes in traffic would not be expected to alter economic conditions at the neighborhood level. Outside the Manhattan CBD, few roadway segments would experience increases in vehicle traffic exceeding 20 percent over the No Action Alternative under any tolling scenario, and these segments would be primarily on highways such as the Long Island Expressway.
- **Car journeys to commercial businesses represent a small percentage of all consumer journeys in and immediately surrounding the Manhattan CBD.** Based on CTPP data, in general fewer than 10 percent of all journeys made to local businesses in the Manhattan CBD are made by auto. Given that the BPM predicts that the CBD Tolling Alternative would reduce non-work auto journeys to the Manhattan CBD by no more than 13 percent (the highest reduction, under Tolling Scenario D), the reduction in non-work journeys to the Manhattan CBD would be no more than approximately 1.3 percent (i.e., a 13 percent reduction of 10 percent of consumer base). Because some of those auto-based trips would transition to transit, the loss of consumer base is expected to be even less than 1.3 percent.
- **Areas receiving incremental traffic (e.g., roadways near the Queens-Midtown Tunnel and the Hugh L. Carey Tunnel) are largely "pass-through" locations.** A vast majority of automobile travelers are not stopping at these locations and therefore would not add consumer spending to these local areas. The Project-generated shifts in traffic would not be attributed to attractions to/from businesses along routes, but rather they would be in response to the imposed tolling program, resulting in different route choices. Therefore, they would have little or no effect on consumer journeys to any particular business, except for perhaps parking facilities (addressed later in this subchapter).

Based on the above, detailed assessment of potential economic effects along neighborhood streets is not warranted and no adverse effect on economic conditions is anticipated.

6.4.1.3 Neighborhoods Near the 60th Street Manhattan CBD Boundary

The northern boundary of the Manhattan CBD, as defined in the MTA Reform and Traffic Mobility Act, is 60th Street. This assessment considers whether the introduction of tolling for vehicles would result in changes in economic conditions in neighborhoods on either side of the Manhattan CBD boundary because of changes in traffic volumes close to 60th Street.

Neighborhoods immediately north and south of the Manhattan CBD boundary regularly experience high volumes of vehicular and pedestrian traffic such that the incremental volumes generated by the CBD Tolling Alternative would not alter local market conditions in a manner that could adversely affect neighborhood character (see **Subchapter 5B, "Social Conditions: Neighborhood Character,"** for additional discussion). This analysis considers the effects of the CBD Tolling Alternative on the local demand for off-street parking, which is a prominent land use in the vicinity of 60th Street across Manhattan, and whether a change in demand could in turn result in a change in the character of the area.[97] Fewer people may seek parking in the areas just inside the Manhattan CBD, while north of the boundary, there could be new demand for off-street parking, and new parkers could become new consumers as they walk to their destinations south of the Manhattan CBD boundary.

It is predicted that "last-mile" switching from auto to walking trips to avoid the toll cost would not be a rational decision beyond approximately five blocks of the Manhattan CBD boundary.[98] For example, an individual with a 55th Street destination would be far more likely to seek parking just north of the 60th Street Manhattan CBD boundary and walk to their destination compared with an individual who has a destination farther south in the Manhattan CBD. Therefore, to assess the potential economic effects of this change in consumer behavior, a study area encompassing the area from 55th Street to 65th Street for the width of Manhattan was evaluated (**Figure 6-9**).

6.4.2 Affected Environment

The area of Manhattan between 55th and 65th Streets from the Hudson River to the East River is characterized by densely developed neighborhoods with a wide mix of uses and strong, established land

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97 The Project's effects on parking are evaluated in **Subchapter 4D, "Transportation: Parking."** The assessment in this chapter considers the possible changes in land use and local economic conditions related to changes in parking demand. Industrywide, the potential reduction in overall auto journeys to the Manhattan CBD is not predicted to be large enough to result in regional impacts to the off-street parking industry or off-street parking facilities within the Manhattan CBD south of 55th Street, because the reduction of auto trips and associated parking would be dispersed throughout the Manhattan CBD.

98 Rational behavior is the cornerstone of rational choice theory, a theory of economics that assumes that individuals always make decisions that provide them with the highest amount of personal utility. These decisions provide people with the greatest benefit or satisfaction given the choices available. While the value individuals place on their time varies depending on personal socioeconomic factors and circumstance, the value of one hour of personal travel time is usually estimated at 25 to 50 percent of earnings, while the value placed on business travel time can exceed 100 percent of earnings (https://www.transportation.gov/sites/dot.gov/files/docs/2016%20Revised%20Value%20of%20Travel%20Time%20Guidance.pdf). For purposes of this analysis, it is assumed that the toll cost is roughly equivalent to one hour of a person's time. Given this assumption, it would be a rational choice for individuals to park north of the 60th Street Manhattan CBD boundary to avoid the toll if the time spent on this "toll avoidance measure" were less than one hour, which when considering walking times roughly equates to an area from 55th to 65th Streets.

use trends. The Manhattan CBD boundary comprises heavy vehicular and pedestrian traffic, with access to multiple subway and bus routes and high transit usage. There are also numerous parking garages.

North of 60th Street, the areas east of Central Park (part of the Upper East Side) and west of Central Park (part of the Upper West Side) are both high-density neighborhoods characterized by residential uses, including rowhouses, mid- and high-rise apartment buildings, and residential skyscrapers. The economic and employment characters of this area include prominent large institutional uses as well as neighborhood commercial corridors along most north–south avenues. The key characteristics of these areas are the combination of high residential density development, congested vehicular and pedestrian traffic conditions, and a mix of office, residential, retail, institutional, and open space uses.

The area south of 60th Street, part of the Manhattan CBD and the northern part of Midtown Manhattan, is a high-density district characterized by a mix of uses, including commercial and residential skyscrapers, retail districts, and large cultural and institutional facilities (Figure 6-9). The areas of Midtown east of Second Avenue and west of Eighth Avenue are much more residential in character, but still very densely developed with rowhouses and mid- and high-rise apartment buildings. There is high pedestrian traffic throughout the day, and heavy vehicular traffic on all north–south roadways, along 57th Street and Central Park South, on the West Side Highway/Route 9A and Franklin D. Roosevelt Drive, and near the entrances and exits to the Ed Koch Queensboro Bridge. The high pedestrian and vehicular traffic and mix of commercial office, residential, and retail uses are key characteristics of the area immediately south of 60th Street.

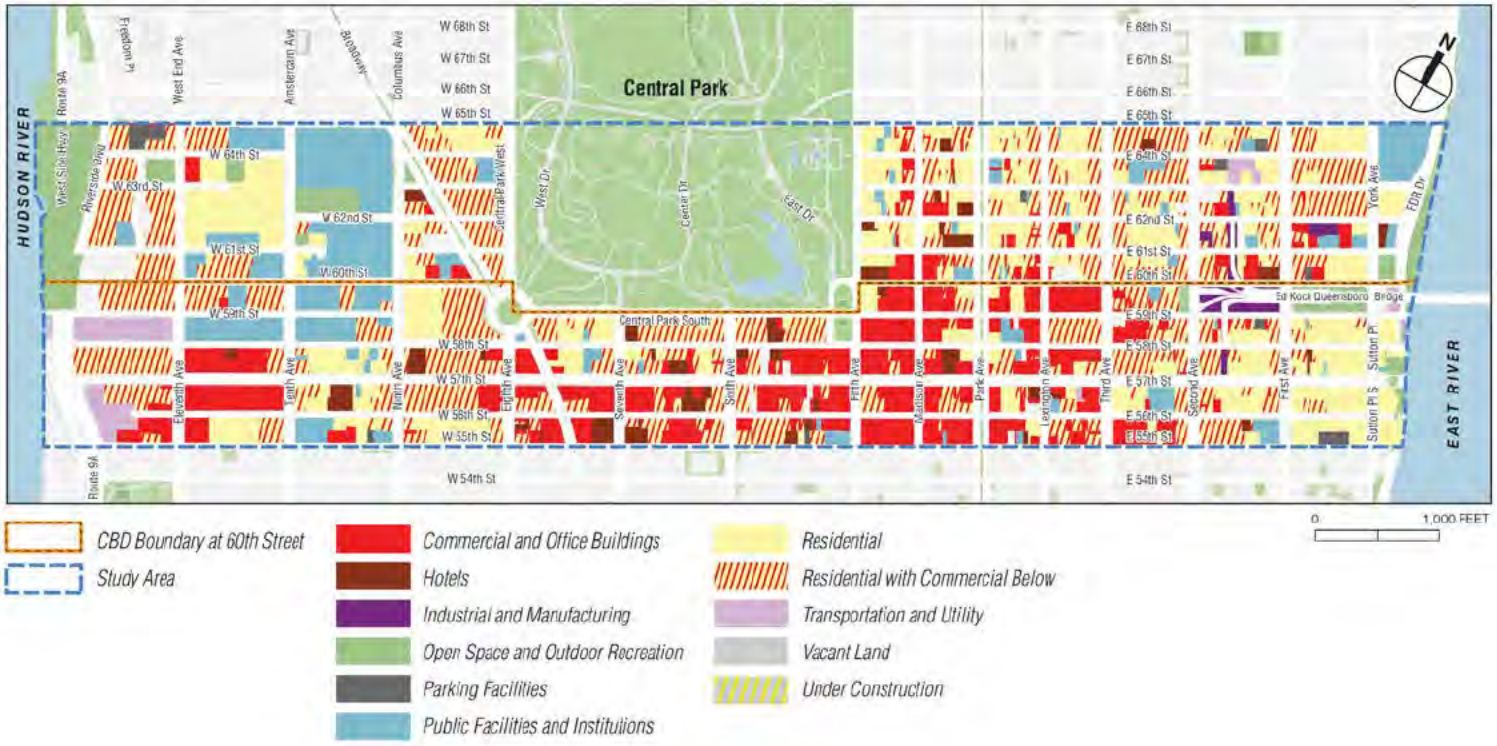
As noted above, neighborhoods immediately north and south of the 60th Street Manhattan CBD boundary regularly experience high volumes of vehicular and pedestrian traffic such that the incremental volumes generated by the CBD Tolling Alternative would not alter local market conditions in a manner that could adversely affect neighborhood character. The BPM projections do not suggest that there would be substantial increases in parking demand immediately north of the 60th Street Manhattan CBD boundary from auto users; the number of cars on each of the avenues immediately north of 60th Street is projected to decrease under all tolling scenarios. In addition, literature research of congestion-based pricing programs in London, England, and Stockholm, Sweden, did not identify adverse effects related to increased parking demand immediately outside of tolling cordons. Nevertheless, this assessment considers potential economic effects if the CBD Tolling Alternative were to increase demand for off-street parking at some locations north of 60th Street, even with a decrease in the overall number of cars. Between 60th and 65th Streets (north of the 60th Street Manhattan CBD boundary), there are approximately 7,525 off-street parking spaces in 52 parking facilities (Figure 6-10 and Table 6-33). If the area were to experience an increase in parking demand, it is expected that incremental demand would be satisfied through available capacity,[99] or if there were capacity constraints, through upward adjustments in parking fees. Changes in parking rates could also affect area residents that use off-street parking facilities. Parking fee adjustments

[99] Based on a sampling of parking utilization collected in 2018 and 2019 during typical conditions for environmental review studies, weekday midday off-street parking utilization ranges from approximately 70 to 80 percent of capacity, with lower utilization rates in the AM and PM peak periods. Applying this utilization estimate to the total off-street parking capacity between 60th and 65th Streets (7,525 spaces) equates to between 1,505 and 2,258 available off-street parking spaces.

north of 60th Street, combined with potential parking fee reductions south of 60th Street due to potential reductions in demand, would offset potential changes in consumer demand behaviors resulting from the CBD Tolling Alternative. Even if such behavior were not fully offset through rate adjustments, there would not be changes in land use patterns; the trend toward lower parking demand combined with high real estate values in this area suggests that new parking garages would not be developed.

In areas immediately south of 60th Street, the CBD Tolling Alternative could reduce local demand for off-street parking, which is a prominent land use in the area. Between 60th and 55th Streets (south of the 60th Street Manhattan CBD boundary), there are approximately 11,500 off-street parking spaces in 88 parking facilities (Figure 6-11 and Table 6-33). This analysis considers whether parking garages immediately south of 60th Street could experience reduced demand at a level that could lead to displacement of off-street parking facilities, and a resulting change in neighborhood character.

Figure 6-9. Land Use Near the 60th Street Manhattan CBD Boundary

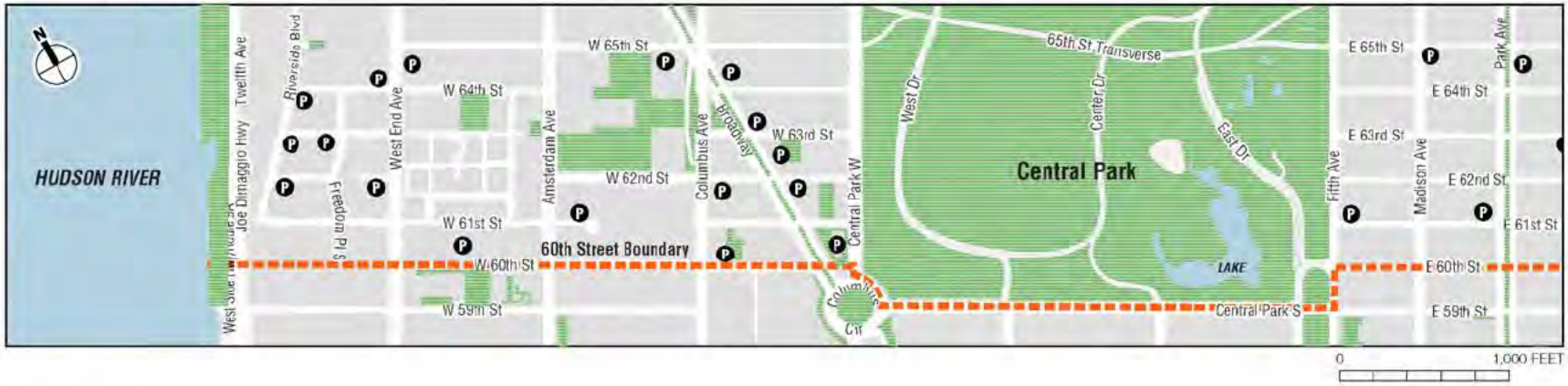


Sources: New York City Department of City Planning, BYTES of the BIG APPLE, https://www1.nyc.gov/site/planning/data-maps/open-data.page.
ArcGIS Online, https://www.arcgis.com/index.html.

[Note: For an audio description, please go to the following link: https://www.youtube.com/watch?v=WexVu8QgX1o&list=PLZHkn788ZQJPEY5zv-dr2gzkzMQFMgb_2&index=7.]

Figure 6-10. Off-Street Parking Facilities between 60th and 65th Streets North of the 60th Street Manhattan CBD Boundary

Western Portion



Eastern Portion

60th Street Boundary

Off-Street Parking Facility

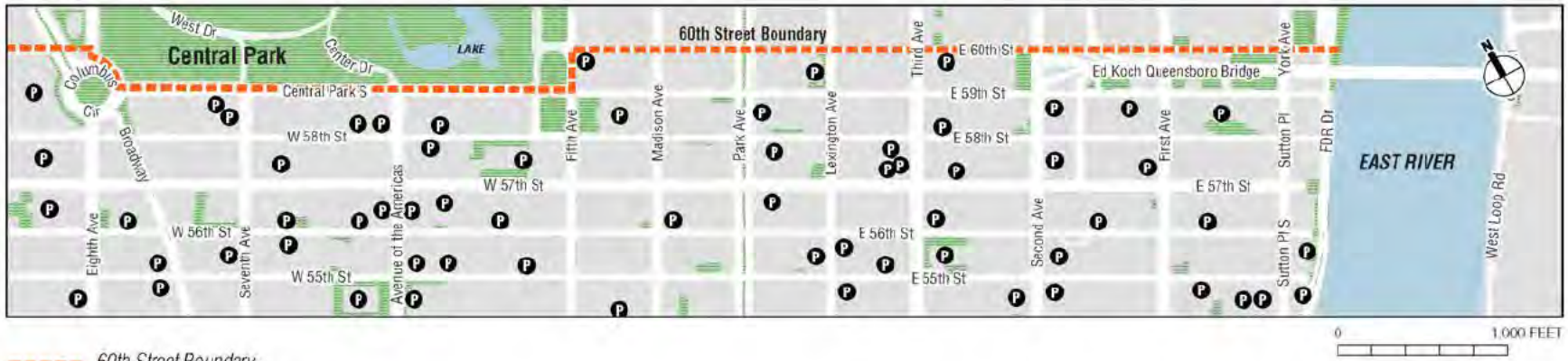
Park or Recreational Resource

Source: Parking facility locational data obtained from the New York City Department of Information Technology & Telecommunications NYCityMap program.

Figure 6-11. Off-Street Parking Facilities between 60th and 55th Streets South of the 60th Street Manhattan CBD Boundary

Western Portion

Eastern Portion



60th Street Boundary

Off-Street Parking Facility

Park or Recreational Resource

Source: Parking facility locational data obtained from the New York City Department of Information Technology & Telecommunications NYCityMap program.

Table 6-33. Parking Garages between 55th and 65th Streets

AREA	BOUNDARIES	PARKING GARAGES	PARKING SPACES
Outside the Manhattan CBD: North of 60th Street (60th to 65th Streets)		**52**	**7,525**
Lenox Hill	East 60th Street to East 65th Street/Franklin D. Roosevelt Drive to Third Avenue	23	2,834
Upper East Side	East 60th Street to East 65th Street/Third Avenue to Fifth Avenue	11	1,031
Lincoln Square	West 60th Street to West 65th Street/Central Park West to Twelfth Avenue	18	3,660
Inside the Manhattan CBD: South of 60th Street (60th to 55th Street)		**88**	**11,541**
East Midtown	East 55th Street to East 60th Street/Franklin D. Roosevelt Drive to Park Avenue	31	4,198
Midtown	59th Street to 55th Street/Park Avenue to Eighth Avenue	36	3,202
Clinton	West 60th Street to West 55th Street/Eighth Avenue to Twelfth Avenue	21	4,141
	TOTAL (55th to 65th Streets)	**140**	**19,066**

Sources: New York City Department of Consumer Affairs data obtained from the New York City Department of Information Technology & Telecommunications NYCityMap program; data for areas inside of 60th Street Manhattan CBD boundary field verified by AKRF in October 2019.

6.4.3 Environmental Consequences

6.4.3.1 No Action Alternative

The No Action Alternative would not implement a vehicular tolling program. It would not affect population, travel patterns, access to employment, or neighborhood economic conditions in the 2023 analysis year. Market conditions at the neighborhood level would not markedly change.

6.4.3.2 CBD Tolling Alternative

This section describes the potential effects of the CBD Tolling Alternative on economic conditions at the neighborhood level. The analysis considers whether additional consumers and/or changes in consumer demand could alter underlying real estate market forces at the neighborhood level, specifically focusing on off-street parking uses and demand.

As shown in **Table 6-34**, under the various tolling scenarios there could be as much as a 10.5 percent reduction in total auto journeys to the Manhattan CBD as compared to the No Action Alternative, which in absolute terms is an estimated 40,906 autos. This is auto journeys from all locations crossing into the Manhattan CBD (60th Street, Hudson River, Brooklyn, and Queens); only a portion of this reduction would occur in journeys coming from the north. However, a conservative estimate of the reduction in demand for parking immediately south of 60th Street was made using the BPM zonal information. This information indicates about 4.5 percent of auto journeys to the Manhattan CBD are bound for the traffic analysis zones just south of 60th Street. Applying this percentage to the largest reduction shown in **Table 6-34** (Tolling Scenario E, with 40,906 fewer vehicles) would reduce potential parking demand in the area immediately south of 60th Street by about 1,840 vehicles per day, which represents approximately 16 percent of the

estimated 11,500 parking spaces located across Manhattan between 55th and 60th Streets.[100] Reduction in parking demand of this volume could jeopardize the viability of one or more parking facilities in the area south of 60th Street. However, given property values and consumer volumes at the northern border of the Manhattan CBD in the area south of 60th Street, if one or more parking facilities were to close, these facilities could be redeveloped or repurposed with other uses; the sites would not remain vacant; therefore, their potential displacement would not create a climate of disinvestment that could lead to adverse effects on neighborhood character.

Table 6-34. Change in Auto Journeys to the Manhattan CBD vs. No Action Alternative

CHANGE IN JOURNEYS	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
Absolute Change	-20,742	-16,173	-25,559	-38,744	-40,906	-31,784	-23,056
Percentage Change	-5.3%	-4.2%	-6.6%	-10.0%	-10.5%	-8.2%	-5.9%

Source: BPM, WSP 2021.

Overall, therefore, changes in traffic patterns predicted as a result of the CBD Tolling Alternative would not alter overall economic activity or conditions in any areas that could see a decrease or increase in traffic on local streets.

6.5 CONCLUSION

Through congestion relief, the CBD Tolling Alternative would provide an economic benefit to the Manhattan CBD, and thus to the region and nation. Most transportation users in the region making journeys to or within the Manhattan CBD by auto, FHV/taxi, bus, or truck would benefit from travel-time savings and travel-time reliability improvements, which are economic benefits because they increase a person's productivity and overall utility by reducing time spent on less productive activities (i.e., traveling to a destination). With fewer vehicular trips entering and exiting the Manhattan CBD, the CBD Tolling Alternative would also reduce vehicle-vehicle and vehicle-pedestrian conflicts, leading to an overall benefit to safety. In addition, the CBD Tolling Alternative would decrease regional VMT relative to the No Action Alternative, which could lead to vehicle operating cost savings for drivers and businesses. Overall, economic benefits to sustaining the economic vitality of New York City as well as benefits to drivers and transit riders are anticipated because of the proposed CBD Tolling Alternative, which would provide for congestion relief in the Manhattan CBD as well as secure funding to sustain capital investment in the regional transit system.

The economic analysis also considers the potential for adverse economic effects resulting from increased commuting costs, increased taxi/FHV fares, and increased delivery costs that could result from the CBD Tolling Alternative on businesses and employees in the Manhattan CBD. The analysis finds that increased auto commuting costs under the CBD Tolling Alternative would not adversely affect any particular industry or occupational category in the Manhattan CBD. Given the highly transit-accessible nature of the

[100] In addition to assuming the largest auto reduction of autos from the tolling scenarios, this analysis conservatively assumes that all auto trips bound for the traffic analysis zones just south of 60th Street are seeking off-street parking, when some of those trips currently secure on-street parking.

Manhattan CBD, the Project's toll on auto commuters would directly affect a relatively small percentage of the overall workforce.

Census data indicates that in the aggregate, there are no industry or occupational categories within the Manhattan CBD for which commuters have a greater propensity or need to commute by auto. Approximately 99 percent of Manhattan CBD workers—and approximately 99 percent of the subset who commute from outside the Manhattan CBD—work within one-half mile of a subway station or SBS stop within the Manhattan CBD. While there are higher rates of auto commuting for specific industries and occupations within certain locations in the Manhattan CBD, the total numbers of employees working at those locations do not constitute a substantial percentage of the total workforce for any industry or occupation within the Manhattan CBD or broader regional study area. The tendency for these workers to commute by auto appears related more to distance from transit and/or availability of free parking than to needs of their occupations or industries.

The analysis finds that costs could increase for drivers and delivery costs could increase if delivery companies pass on the toll cost to customers. Taxis would be most affected by CBD tolling, because 75 percent of taxi trips start or end in the Manhattan CBD. FHVs rely less on trips in the Manhattan CBD, because only about 38 percent of "high-volume" FHV trips start or end in the Manhattan CBD. Taxi and FHV fares may increase under tolling scenarios that toll taxis and/or FHVs more than once a day and there could be reductions in demand and corresponding reductions in employment within the industry. The potential reductions in revenue and employment would not be of an amount that could jeopardize the overall viability of the taxi/FHV industry within the region. Overall, these increased costs would not adversely affect the operations of businesses in the Manhattan CBD, its ability to attract employees, and the viability of the taxi and FHV industry. There is already a high cost associated with locating in or travel to the Manhattan CBD, and the toll cost would not meaningfully change the competitiveness or attractiveness of doing business in the Manhattan CBD. *[Moreover, the Project Sponsors have committed to tolls of no more than once per day for taxis or FHVs, which will further reduce the potential effects on the taxi and FHV industry.]*

The analysis indicates no adverse changes to commercial traffic providing goods and services to the Manhattan CBD. Because incremental toll costs would not be borne by many customers or would be diluted among many customers, the incremental cost would not be expected to jeopardize the viability of the freight industry or the many industries that rely on freight services. *[For the Final EA, the Project Sponsors have added two new mitigation commitments to incentivize off-peak truck deliveries and reduce the number of trucks that divert around the Manhattan CBD: 1) a commitment to further reduce overnight toll rates; and 2) a commitment to expand NYCDOT's Off-Hours Delivery Program, a pilot program that provides support for businesses that shift their deliveries to off-peak periods.]*

The neighborhoods near the 60th Street boundary of the Manhattan CBD would experience changes in travel patterns as a result of the CBD Tolling Alternative. This analysis considers whether those changes could substantially affect the economic characteristics of these neighborhoods, and in particular, off-street parking facilities located there. Neighborhoods immediately north and south of the 60th Street Manhattan CBD boundary regularly experience high volumes of vehicular and pedestrian traffic such that the

incremental volumes generated by the CBD Tolling Alternative would not alter local market conditions in a manner that could adversely affect neighborhood character. Reduction in parking demand from the CBD Tolling Alternative could jeopardize the viability of one or more parking facilities in the area south of 60th Street. However, given property values and consumer volumes at the northern border of the Manhattan CBD in the area south of 60th Street, if one or more parking facilities were to close, these facilities could be redeveloped or repurposed with other uses; the sites would not remain vacant, and therefore their potential displacement would not create a climate of disinvestment that could lead to adverse effects on neighborhood character. Overall, therefore, changes in traffic patterns predicted as a result of the CBD Tolling Alternative (for all tolling scenarios) would not alter overall economic activity or conditions in any areas that could see a decrease or increase in traffic on local streets.

Table 6-35 provides a summary of the conclusions of this chapter *[and Table 6-36 summarizes how enhancement measures will be implemented by the Project Sponsors]*.